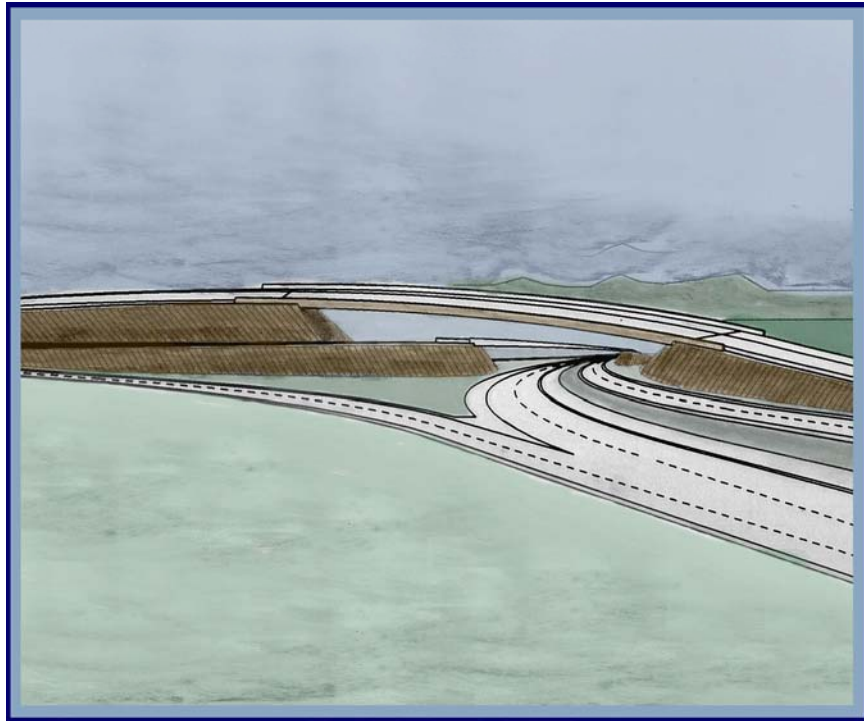


Butte 70/149/99/191 Highway Improvement Project



Final Environmental Impact Statement/Report

State Route 70/149/99/191 in Butte County, California

03-But-70/149/99/191

KP 31.0/35.6 (SR 70); 0.0/7.5 (SR 149); 33.1/39.6 (SR 99); 0.0/0.8 (SR 191)

PM 19.9/22.1; 0.0/4.6; 20.7/24.6; 0.0/0.5

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February, 2003



General Information About This Document

This document is a Final Environmental Impact Statement/Report (FEIS/FEIR) which examines the environmental impacts of proposed improvements on State Routes 70/149/99/191 in Butte County, California.

This document meets the requirements of both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) which require the preparation of an Environmental Impact Statement (EIS) and an Environmental Impact Report (EIR) when it has been determined that a project involving Federal and/or State funds may have substantial impacts on the environment. While CEQA requires that each effect having a “significant impact” be identified in an EIR, NEPA does not. In this document, references to “significant impact” are made to fulfill this requirement under CEQA, pursuant to California law. No representation as to significance made in this document represents an assessment as to the magnitude of such an impact under the requirements of Federal law. Under NEPA, no such determination need be made for a specific environmental effect.

The Draft Environmental Impact Statement/Report (DEIS/DEIR) was circulated to the public for 45 days, from June 14, 2002 to July 29, 2002. A public workshop was held on July 10, 2002. Comments received on the DEIS/DEIR, comments from the public workshop, and Caltrans/FHWA responses are contained in Appendix B. Changes made to the DEIS/DEIR text in response to comments received are contained in this FEIS/FEIR, as indicated by a vertical line in the right margin.

What happens after this?

Following review and approval of this FEIS/FEIR, Caltrans and FHWA may (1) give environmental approval to the proposed project, (2) undertake additional environmental studies, or (3) abandon the project. If the project were given environmental approval and funding were appropriated, Caltrans could design and construct all or part of the project.

For individuals with sensory disabilities, this document could be made available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Jean L. Baker, Caltrans Environmental Management M-2, P.O. Box 911, Marysville, CA 95901; (530) 741-4498 Voice, or use the California Relay Service TTY number, 1(800) 735-2929.

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**TITLE VI
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A handwritten signature in black ink that reads "Jeff Morales".

JEFF MORALES
Director

Upgrade State Route 149 to Four-Lane Expressway
From Route 70 North of Oroville to Route 99 South of Chico, in Butte County, California

FINAL ENVIRONMENTAL IMPACT STATEMENT / REPORT

Submitted Pursuant to: (Federal) 42 USC 4332(2)(C)
(State) Division 13, Public Resources Code

U.S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration, and
THE STATE OF CALIFORNIA
Department of Transportation

Cooperating Agencies:
U.S. Army Corps of Engineers
U.S. Fish and Wildlife Service
National Marine Fisheries Service

Responsible Agency:
California Department of Fish and Game

Feb. 7, 2003
Date of Approval

Jody E. Loneragan
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Feb 11, 2003
Date of Approval

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Abstract

The proposed action would upgrade the two-lane State Route (SR) 149 to a four-lane expressway between SR 70 and SR 99 [7.5 KM (4.6 mi)], and construct freeway-to-freeway interchanges at the SR 70 and 99 intersections. The purpose of the proposed project is to improve safety, provide concept Level of Service (LOS) C for the year 2020, and provide an inter-regional transportation facility between Oroville and Chico. The estimated project cost is \$80-90 million. Three build alternatives and the no build alternative were considered in the draft document. Alternative 3, Avoid Butte County Meadowfoam (BCM) has been identified as the preferred alternative. Mitigation measures have been developed to reduce the project's impacts to wetlands, vernal pool tadpole and fairy shrimp, Central Valley Chinook salmon and steelhead trout, Valley Elderberry Longhorn Beetle, Northwestern pond turtles, Butte County Meadowfoam (indirect impacts), and Swainson's hawk foraging habitat. The project's impacts to riparian habitat, water quality, oak woodlands, visual resources, homes and businesses would also be mitigated. The project may also contribute to cumulative impacts to wetlands, vernal pool tadpole and fairy shrimp and BCM. Butte County is preparing a Habitat Conservation Plan to address impacts from this and other projects in Butte County.

Executive Summary

This Final Environmental Impact Statement/Final Environmental Impact Report (FEIS/FEIR) has been prepared to meet requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) for projects that could have adverse impacts on the environment. It summarizes detailed technical studies for the purpose of informing the public and decision-makers about the environmental effects of the proposed project, and presenting reasonable alternatives that would avoid or minimize adverse impacts.

The following summary identifies major items of importance to decision-makers regarding the proposed project. Detailed project information is presented in the body of the document.

S.1 Proposed Action

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) are proposing a highway improvement project on SR 149 in Butte County, California, between the cities of Chico and Oroville (Figure S-1). The proposed project would upgrade State Route (SR) 149 to a four-lane expressway and construct freeway-to-freeway interchanges at the SR 70/149 and SR 99/149 intersections. The project would improve traffic safety and reduce congestion. Improvements would include:

- Construction of two additional 3.6 meter(m) [12 foot(ft)] lanes, 18.6 m to 22 m (60 ft to 72 ft) median, 3 m (10 ft) outside shoulder and 1.5 m (5 ft) median shoulder for the full length of SR 149 (4.6 mi)
- Realignment of SR 70 between SRs 149 and 191
- Rehabilitation of the existing SR 149 roadway
- Construction of freeway-to-freeway interchanges at the existing SR 70/149 and 99/149 intersections
- Reconstruction of the SR 70/191 intersection
- Construction of driveway access roads

Figure S-1. Project Vicinity

- Construction of county roads including a portion of Shippee Road, Table Mountain Blvd. and the Book Farm Road.

The proposed project would provide a gap-closure between the four-lane SR 70 freeway to the southeast, and the four-lane SR 99 expressway to the northwest.

Other Caltrans/FHWA actions proposed in the vicinity include an interchange at the existing Ophir Rd./SR 70 intersection in Oroville with extension of the freeway for 3.2 km (2 mi) south, and widening SR 70 to a four-lane expressway/freeway from south of Marysville to Oroville (“Marysville Bypass”).

S.2 Project Alternatives

As part of the integration process for projects requiring approval under NEPA and an Army Corps of Engineers (USACOE) Individual Section 404 (Clean Water Act) permit, an Alternatives Analysis was prepared by the Caltrans District 3 Environmental Branch (*Caltrans 2000*). Under this “NEPA/404 Process,” sixteen roadway alternatives, two interchange options and two options for each of four driveway access roads (private residences) were examined. As a result of this analysis, three alternatives for widening SR 149, one interchange design and one option for each of the four driveway access roads were selected for consideration in the draft EIS/EIR. The remaining alternatives/design options were eliminated from further study (see Chapter 2, Section 2.1.2, “Alternatives/Options Variations Considered and Eliminated”). The following alternatives for widening SR 149 were considered:

Alternative 1 – Widen to the South

Alternative 2 – Widen to the North

Alternative 3 – Avoid Butte County Meadowfoam (“BCM,” *Limnanthes floccosa californica*, a special status plant)

Other project features such as interchange design and driveway access roads would be the same for each of the alternatives.

A No Build alternative was also considered, where SR 149 would remain a two-lane highway and the SR 99/149 and 70/149 intersections would remain unchanged.

Figure 1-1 (in Chapter One) shows the project location, and Chapter Two gives a detailed discussion of project alternatives.

S.2.1 Identification of Preferred Alternative

Alternative 3, Avoid Butte County Meadowfoam, has been identified as the preferred alternative under NEPA, and as the Least Environmentally Damaging Practicable Alternative (LEDPA) under Section 404(b)(1) of the Clean Water Act. The U.S. Environmental Protection Agency (USEPA), U.S. Fish & Wildlife Service (USFWS) and the U.S. Army Corps of Engineers (USACOE) have concurred with these determinations as required by the NEPA/404 Integration Memorandum (see Appendix C).

Alternative 3 was identified as the LEDPA/preferred alternative as it would avoid direct impacts to Butte County Meadowfoam, and would result in the fewest impacts to aquatic resources and special status species.

S.3 Summary of Impacts by Alternative

The following table presents a summary of impacts by alternative. Further discussion of each item in the table is presented in Chapters 3 -5.

Table S-1. Summary of Impacts by Alternative

<i>Potential Impact</i>		<i>Alternative 1 South</i>	<i>Alternative 2 North</i>	<i>Alternative 3 Avoid BCM*</i>	<i>No Build Alternative</i>	<i>Minimization / Mitigation</i>
Farmland conversion Prime and Unique Hectares (acres)		1.2 (3)	1.2 (3)	1.2 (3)	0	None Required
Williamson Act land		24 parcels impacted	24 parcels impacted	24 parcels impacted	No impact	None Required
Business displacements		3-4	3-4	3-4	0	Relocation Assistance
Housing displacements		4	4	4	0	Relocation Assistance
Consistency with Butte County General Plan		yes	yes	yes	No	None Required
Noise	# of receptors approaching or exceeding Leq 67 dBA	3	3	3	3	Considered; Not reasonable
Water quality		Temporary Construction impacts	Temporary Construction impacts	Temporary Construction impacts	No impact	Construction Measures
Floodplain Encroachment		Transverse, 2 locations	Transverse, 2 locations	Transverse, 2 locations	No impact	None Required
Air Quality		Temporary Construction impacts	Temporary Construction impacts	Temporary Construction impacts	No impact	Construction Measures

Summary

<i>Potential Impact</i>		<i>Alternative 1 South</i>	<i>Alternative 2 North</i>	<i>Alternative 3 Avoid BCM*</i>	<i>No Build Alternative</i>	<i>Minimization / Mitigation</i>
Fairy & Tadpole Shrimp Habitat	Direct impact ha (ac)	13.59 (33.58)	12.14 (30)	11.87 (29.33)	0	Preservation/ Creation of Habitat; construction measures
	Indirect impact ha (ac)	5.66 (13.99)	6.79 (16.78)	6.88 (17.0)	0	
Vernal Pools & Swales	Permanent impact ha (ac)	2.95 (7.29)	2.71 (6.69)	2.25 (5.56)	0	Creation / acquisition of habitat; construction measures
	Temporary impact ha (ac)	0.38 (0.94)	0.59 (1.46)	0.38 (0.94)	0	
Total wetlands & waters area, ha (ac)		9.47 (23.4)	10.21 (25.23)	8.95 (22.12)	0	Creation / acquisition of habitat
BCM*	direct impact ha (ac)	0.16 (0.40)	0.01 (0.03)	0	0	Preservation / acquisition of habitat; Construction measures
	indirect impact ha (ac)	0.02 (0.04)	0.22 (0.54)	0.21 (0.53)	0	
Valley Elderberry Longhorn Beetle (No. Elderberry shrubs impacted, approx.)		22	17	22	0	Minimize / Replacement plantings
Oak Woodlands Ha (ac)		0.52 (1.28)	0.53 (1.31)	0.56 (1.37)	0	Minimize / replacement plantings
Riparian habitat Ha (ac)		1.06 (2.62)	0.86 (2.13)	0.89 (2.20)	0	Construction measures, revegetation
Cultural resources		No effect	Further evaluation if necessary	No effect	No impact	Construction measures
Potential Hazardous Waste sites		1	1	1	0	Construction Measures
Volume of fill imported as % of total cut & fill volume		20%-30%	20%-30%	20%-30%	0	N/A
Maximum projected cut and fill heights		Cut – 7m (23ft) Fill – 16m (53ft) for interchange ramps	Cut – 7m (23ft) Fill – 16m (53ft)	Cut – 7m (23ft) Fill – 16m (53ft)	0	N/A
Visual Impacts		Interchange ramps	Interchange ramps	Interchange ramps	No impact	Revegetation, landscaping
Cumulative impacts		Vernal pools, wetlands, BCM	Vernal pools, wetlands, BCM	Vernal pools, wetlands, BCM	No impact	Cumulative Mitigation, HCP
Growth inducement		Not substantial	Not substantial	Not substantial	No impact	None Required

* BCM = Butte County Meadowfoam

Cumulative Impacts

Vernal pools and associated species and other wetlands are the most sensitive resources in the cumulative effects area. The distribution of vernal pools is largely

concentrated in the northern part of the cumulative effects area in Butte County (see Figure 4-1), with more fragmented and isolated pools in the southern part of the area. It would be difficult to totally avoid these resources and their associated species, as well as other wetlands, with future planned transportation projects, and it is anticipated that additional losses would occur. This would contribute to the cumulative loss of these resources in the region. Mitigation requirements currently include creation and acquisition of habitat to accomplish “no net loss.” These requirements would minimize cumulative effects. As part of the NEPA/404 coordination effort, Caltrans and FHWA have agreed to investigate and pursue mitigation land for vernal pool and other wetland habitat on a scale sufficient to offset impacts of the SR 149 and other SR 70 projects. In addition, local agencies within Butte, Sutter and Yuba counties are committed to pursuing Habitat Conservation Plans to address impacts from future projects. Chapter 3 discusses growth impacts, and Chapter 4 provides a detailed discussion of the cumulative impacts associated with the proposed project and other related projects.

Growth Inducement

The proposed SR 70/149/99/191 project lies within a rural area between the communities of Oroville and Chico, and the majority of land adjacent to the project is zoned for agriculture. There are no public facilities or developments within the project limits. The proposed project would construct a limited access expressway, and no new access points are proposed. The SR 70/149 and 99/149 interchanges would be access controlled – no public access would be allowed in these areas. The only access point would be the existing SR 149/ Shippee Rd. intersection. It is expected that future growth in the county will mainly occur within the existing Chico and Oroville urbanized areas. The proposed project would accommodate planned development, but would not induce substantial population growth.

S.4 Summary of Proposed Mitigation

The following mitigation measures are based on impacts associated with Alternative 3, Avoid Butte County Meadowfoam, which has been identified as the preferred alternative/LEDPA.

Business / Housing Displacements

Property owners would receive fair market value compensation for any land or improvements acquired by the State. Caltrans and FHWA would provide relocation

assistance in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies act of 1970, as amended (Appendix I).

Noise

The proposed project would result in noise impacts to three residences that would meet or exceed the Noise Abatement Criteria (NAC) level at which abatement must be considered. This impact could be reduced with construction of a soundwall. However, soundwalls are only considered an effective mitigation measure if they also meet the “feasibility” and “reasonableness” criteria as outlined in 23 CFR 772.11 and in the Caltrans Traffic Noise Analysis Protocol. These criteria were applied and were not met, therefore no mitigation is proposed. Additionally, noise levels for the No Build alternative are predicted to be within 2 dBA of the build alternative. A difference of 2 dBA is generally not perceptible to humans and is not considered a substantial increase. The proposed project would not result in substantial noise impacts.

Project construction would comply with Caltrans Standard Specification 7-1.011 for minimizing noise impacts during construction.

Water Quality

The practices outlined in the Storm Water Management Plan (SWMP) and Statewide Storm Water Practice Guidelines would ensure that certain minimum design elements are incorporated into the project to maintain or improve water quality. The key elements are as follows:

- Minimize impervious Surfaces – The proposed project would reduce total runoff volume by reducing impervious areas where possible.
- Prevent Downstream Erosion – Drainage facilities would be designed to avoid causing or contributing to downstream erosion. Drainage outfalls, when appropriate, would discharge to suitable control measures.
- Stabilize Disturbed Soil Areas – Project design would incorporate stabilization of disturbed areas (when appropriate) with seeding, vegetative or other types of cover.
- Maximize Existing Vegetative Surfaces – Project design would limit the footprint of cuts and fills to minimize removal of existing vegetation.

The project as planned would not create a substantial increase in downstream erosion or siltation.

The Construction General Permit (Order No. 99-08-DWQ)(CA000002) would require that all storm water discharges associated with construction activities that result in soil disturbance of at least 5 acres of total land area would comply with the provisions specified in the permit, including development and implementation of an effective Storm Water Pollution Prevention Plan (SWPPP). The SWPPP is a document that addresses water pollution controls for the project during construction and would be prepared by the contractor and approved by the Resident Engineer prior to commencement of soil-disturbing activities.

Air Quality

The proposed project is included in Butte County's Regional Transportation Plan and the Federal Transportation Improvement Program. Any additional emissions from the project have been accounted for in these plans. The project would not create an impact to ozone levels in the area and would result in improved traffic flow, which would lower CO emissions. In addition, the project would not contribute to further degradation of the PM-10 air quality in the area (Section 3.4).

If final project design determines that any structures would be disturbed or demolished for construction of the project, trained inspectors would be hired to determine the presence/absence of asbestos and/or lead-based paint. Asbestos can pose a health risk if the fibers become airborne during removal and are inhaled. Dust and paint chips from lead-based paint can pose a health risk if they are inhaled or swallowed. If any structures were found to contain these substances, registered asbestos and/or lead abatement contractors would handle debris removal and disposal according to requirements set forth by the California Occupational Safety and Health Administration (Cal-OSHA) and the Butte County Air Quality Management District.

The Caltrans Standard Specifications are expected to effectively reduce and control emission impacts during construction. The provisions of Section 7-1.01F, Air Pollution Control, require the contractor to comply with the local jurisdiction's rules, regulations, ordinances, and statutes.

Wetlands

Vernal Pools and Swales

Mitigation for permanent impacts to 2.25 ha (5.56 ac) of vernal pools and swales would be covered by the mitigation for impacts to vernal pool fairy shrimp/tadpole shrimp habitat (see pg. S-11). Mitigation for temporary impacts to 0.38 ha (0.94 ac) would consist of restoring the impacted area on site at a ratio to equal “no net loss” of habitat.

Freshwater Marsh

Permanent impacts to 2.7 ha (6.7 ac) of the freshwater marsh area near the SR 70/149 intersection (“beaver pond”) would be mitigated at a 1.5:1 ratio on site by creating approximately 4.05 ha (10.0 ac) of habitat adjacent to the existing marsh. Mitigation for temporary impacts would consist of restoring the impacted area through revegetation.

Mixed Riparian

Mitigation for permanent impacts to 0.97 ha (2.37 ac) of drainage ditches and upland “beaver pond” areas would consist of replacing ditches in-kind and vegetating creek crossings and the created marsh habitat at a 1.5:1 ratio for a total of 1.46 ha (3.56 ac). Mitigation for temporary impacts would consist of revegetation of the impacted areas with native species.

Other Wetlands

Mitigation for permanent impacts to 0.47 ha (1.16 ac) of other wetlands, such as pastureland, would be out-of-kind at a 1.5:1 ratio for a total of 0.71 ha (1.74 ac). This would be incorporated with mitigation for mixed riparian, freshwater marsh and vernal pool/swale impacts. Temporary impacts would be mitigated through restoration and revegetation of impacted areas.

Roadway Drainages

Mitigation for impacts to 1.17 ha (2.89 ac) of roadway drainages would consist of replacing ditches on-site, in-kind.

Jurisdictional Non-Wetland Waters

Mitigation for impacts to 1.10 ha (2.72 ac) of non-wetland riparian and un-vegetated channel below the ordinary high water mark would be out-of-kind through increasing the function of adjacent riparian habitat at Little Dry, Clear and Gold Run Creeks. The mitigation would be at a 1.2:1 ratio for a total of 1.32 ha (3.27 ac).

Oak Woodlands/Oak Specimen Trees

Permanent impacts to 0.55 ha (1.37 ac) of oak woodlands and 29 specimen trees would be mitigated through replacement planting on site. CDFG has reviewed the oak mitigation plan. Oak trees to be avoided during construction would be identified on project plans as Environmentally Sensitive Areas (ESAs) and marked in the field by staking or fencing the tree canopies. Estimated cost for this mitigation is currently being assessed.

Hazardous Waste - If any structures that would be disturbed during construction were found to contain asbestos and/or lead-based paint, a certified contractor would handle debris removal and disposal. If final design determines that construction would disturb a former fuel underground storage tank site, soil in the area of disturbance would be tested prior to construction. If necessary, contaminated soil would be removed and disposed of by a registered contractor.

Visual Impacts

Slopes along the interchange ramps would be constructed at a 2:1 slope or flatter when possible to promote blending with surrounding landscape. The slopes would be planted with native grasses, trees and shrubs. Revegetation with native species would occur in disturbed areas throughout the project area.

Cumulative Impacts

Proposed mitigation would reduce direct and indirect project impacts to less than significant levels (CEQA). Mitigation would also minimize cumulative impacts to endangered vernal pool shrimp species, Butte County Meadowfoam and wetlands.

S.4.1 Summary of Endangered Species Consultation and Mitigation

Caltrans and FHWA have completed formal Section 7 consultation with the USFWS and National Marine Fisheries Service (NMFS) in accordance with the Federal Endangered Species Act (ESA) of 1973, as amended for the proposed SR

70/149/99/191 Highway Improvement Project in Butte County. In compliance with the California Endangered Species Act (CESA), Caltrans has consulted with the California Department of Fish and Game.

USFWS

The USFWS Biological Opinion (B.O.; Appendix D) addresses the effects of the proposed action on the endangered Butte County Meadowfoam (*Limnanthes floccosa ssp. californica*); threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*); endangered vernal pool tadpole shrimp (*Lepidurus packardii*); threatened vernal pool fairy shrimp (*Branchinecta lynchei*); and proposed vernal pool critical habitat. Implementation of the proposed project would not adversely affect the threatened California red-legged frog (*Rana aurora draytonii*), threatened giant garter snake (*Thamnophis gigas*), endangered Greene's Tuctoria (*Tuctoria greenei*), endangered hairy orcutt grass (*Orcuttia pilosa*), or the threatened Hoover's spurge (*Chamaesyce hooveri*). Appendix H contains a USFWS list of endangered and threatened species that may be present in or may be affected by the proposed project.

The USFWS B.O. states that the proposed project may affect Butte County Meadowfoam (BCM), vernal pool fairy shrimp, vernal pool tadpole shrimp and valley elderberry longhorn beetle (VELB). The FHWA and Caltrans have proposed avoidance, minimization, and conservation measures sufficient to offset the adverse effects of the proposed action to these species, and the B. O. concludes that the proposed action is not likely to jeopardize their continued existence. Proposed critical habitat for BCM, vernal pool tadpole shrimp and fairy shrimp would not be adversely modified or destroyed. Critical habitat for VELB does not occur in the action area of the project, and, therefore, would not be adversely modified.

Proposed avoidance, minimization and conservation measures would include:

Vernal pool fairy shrimp and vernal pool tadpole shrimp:

1. The effects to listed vernal pool crustaceans resulting from habitat modification and loss and project construction would be minimized.
2. Conservation measures for loss of vernal pool fairy shrimp and tadpole shrimp habitat due to direct and/or indirect effects would consist of both preservation and creation components to ensure "no net loss" of habitat. Mitigation measures would include the acquisition of a preservation easement and/or purchase of

credits at an established conservation bank for a total of 37.5 ha (92.66 ac) of vernal pool crustacean habitat. This easement/credit would provide a 2:1 preservation component for 11.87 ha (29.33 ac) of direct impact and 17 acres of indirect impacts. The estimated cost for this mitigation is currently being assessed.

The creation component of the 11.87 ha (29.33 ac) of direct impact would be satisfied through vernal pool creation at a site approved by the USFWS and USACOE. The estimated cost of this mitigation is \$2,044,000.

Butte County Meadowfoam:

No direct impacts to Butte County Meadowfoam are anticipated with the construction of the proposed project. Indirect impacts would affect approximately 0.21 ha (0.53 ac). Mitigation would consist of a contribution at a 5:1 ratio [1.1 ha (2.7 ac)] to a multi-agency purchase of property containing an established population of BCM. Estimated cost for this mitigation is \$175,000.

Valley Elderberry Longhorn Beetle:

Mitigation for direct/permanent impacts to Valley Elderberry Longhorn Beetle, “VELB” would follow the *USFWS 1999 Conservation Guidelines for the Valley Elderberry Longhorn Beetle* and the associated B. O. for avoidance, establishment, restoration, and maintenance of buffer zones. It would include transplanting shrubs and replacement planting and monitoring. For 22 shrubs impacted, 24 replacement planting basins would be required, at a total cost of approximately \$36,000. In addition, transplanting costs are estimated to be \$102,000.

NMFS Consultation

Consultation with NMFS was undertaken to address the effects of the proposed action on Essential Fish Habitat (EFH) for Central Valley fall/late fall-run Chinook salmon (*Oncorhynchus tshawytscha*). Under provisions of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), Section 305(B)(4)(A), NMFS has provided conservation recommendations for the implementation of the proposed project (Appendix D). As required by Section 305(B)(4)(B) of the MSFCMA, and 50 CFR 600.920(j), FHWA will comply with the recommendations. With these measures in place, the conclusion of NMFS consultation is that the proposed project would not be likely to adversely affect EFH for Chinook salmon. Mitigation for loss of 0.89 ha (2.20 ac) of salmonid habitat would include

revegetation at bridge crossings and adjacent creek banks at a ratio to ensure “no net loss” of habitat.

CDFG Consultation

Consultation with CDFG regarding effects of the proposed action resulted in the following:

Swainson’s hawk

Pre-construction surveys would determine presence/absence of active nests within a 10-mile radius of the project area. Mitigation for the potential loss of 63.0 ha (155.77 ac) of Swainson’s hawk foraging habitat would be covered by the upland component of preservation of vernal pool fairy and tadpole shrimp habitat, as approved by CDFG.

Butte County Meadowfoam

BCM is a State and Federal listed species. Conclusions in the USFWS B. O. and conceptual Habitat Mitigation and Monitoring Proposal (HMMP) also address CDFG’s concerns regarding project impacts to this species.

Northwest Pond Turtle

Mitigation for loss of 1.87 ha (4.61 ac) of habitat would be covered under mitigation for impacts to freshwater marsh.

Chinook salmon and steelhead habitat

Construction measures such as restricting in-water work, minimizing creek channel disturbance, and maintaining fish passage would be implemented to avoid/minimize impacts to salmonids. As stated above under NMFS consultation, restoration of streamside and riparian vegetation would ensure “no net loss” of habitat.

Other species

Pre-construction surveys would be conducted to determine the presence of bats, nesting birds, and birds-of-prey. Measures such as avoiding construction during nesting periods, removing unoccupied nests outside the breeding season, and excluding nest building and roosting would be implemented as necessary to minimize impacts to these species.

S.5 Issues to be Resolved

Issues to be resolved before implementation of the proposed project are listed below. Impacts are discussed in detail in Chapter 3.

- Final project design
- Right-of-way acquisition and utility relocation
- Permits and approvals

S.6 Permits and Approvals

The following permits and/or approvals would be required prior to construction of the proposed project:

- Streambed alteration agreement (Section 1601) from the CDFG
- Clean Water Act – Section 404 individual permit from USACOE
- Section 401 certification/waiver from Regional Water Quality Control Board (RWQCB)

In addition, an Incidental Take Permit pursuant to Section 2081 of the Calif. Fish and Game Code may be required. This determination would be made after pre-construction surveys for presence/absence of State-listed species.

NEPA/404 Concurrence Process

In 1997, Caltrans and the FHWA began coordinating with the federal resource agencies, including the USFWS, USACOE, and USEPA to implement the NEPA/404 Integration Process for the proposed project. Concurrence was received for purpose and need, criteria for selecting alternatives, and range of alternatives prior to public circulation of the DEIS/R. In August 2002, Caltrans, FHWA, USEPA and USACOE identified Alternative 3 as the preferred alternative/Least Environmentally Damaging Practicable Alternative, and in November 2002 USFWS issued a non-jeopardy Biological Opinion for impacts to threatened and endangered species. A detailed Habitat Mitigation and Monitoring Proposal (HMMP) has been reviewed and approved by USEPA, USFWS, and USACOE (Appendix C).

Record of Decision / Notice of Determination

Upon certification of the Final EIR by Caltrans and approval of the Final EIS by FHWA, Caltrans would file a Notice of Determination (NOD). FHWA would prepare a Record of Decision (ROD) describing why the preferred alternative was chosen. Caltrans would prepare Findings and a Statement of Overriding Considerations for impacts considered significant under CEQA.

Contents

Executive Summary	S-1
S.1 Proposed Action.....	S-1
S.2 Project Alternatives	S-3
S.2.1 Identification of Preferred Alternative.....	S-4
S.3 Summary of Impacts by Alternative.....	S-4
S.4 Summary of Proposed Mitigation.....	S-6
S.4.1 Summary of Endangered Species Consultation and Mitigation	S-10
S.5 Issues to be Resolved.....	S-14
S.6 Permits and Approvals.....	S-14
Contents	i
List of Figures	iv
List of Tables	v
Abbreviated Terms.....	vi
Chapter 1 Purpose of and Need for Project.....	1-1
1.1 Introduction.....	1-1
1.2 Need for the Proposed Action.....	1-1
1.3 Purpose of the Proposed Project	1-8
1.4 Project Background.....	1-8
1.5 Project Description.....	1-9
Chapter 2 Alternatives.....	2-1
2.1 Alternative Development Process.....	2-1
2.1.1 Criteria for Alternative Selection.....	2-1
2.1.2 Alternatives / Design Options Considered and Eliminated.....	2-2
2.1.3 Alternatives Selected for Detailed Study	2-10
2.2 Project Alternatives.....	2-11
2.2.1 Alternative 1 – Widen to the South.....	2-11
2.2.2 Alternative 2 – Widen to the North.....	2-13
2.2.3 Alternative 3 – Avoid Butte County Meadowfoam	2-15
2.2.4 Common Features of Build Alternatives	2-15
2.2.5 No Build Alternative.....	2-19
2.3 Identification of Preferred Alternative.....	2-20
Chapter 3 Affected Environment, Environmental Consequences, and Mitigation	3-1
3.1 Geology and Soils	3-1
3.1.1 Affected Environment.....	3-1
3.1.2 Impacts.....	3-2
3.1.3 Mitigation.....	3-2
3.2 Water Quality and Hydrology.....	3-2
3.2.1 Affected Environment.....	3-2
3.2.2 Impacts.....	3-4
3.2.3 Mitigation.....	3-4
3.3 Hazardous Waste Sites.....	3-6
3.3.1 Affected Environment.....	3-6
3.3.2 Impacts.....	3-8
3.3.3 Mitigation.....	3-9
3.4 Air Quality	3-9
3.4.1 Affected Environment.....	3-9
3.4.2 Impacts.....	3-10

3.4.3 Mitigation	3-12
3.5 Noise	3-12
3.5.1 Affected Environment	3-12
3.5.2 Impacts	3-13
3.5.3 Abatement/Mitigation	3-15
3.6 Wetlands and Waters of the U.S.	3-16
3.6.1 Affected Environment	3-16
3.6.2 Impacts	3-19
3.6.3 Mitigation	3-21
3.7 Vegetation, Fisheries, and Wildlife	3-22
3.7.1 Affected Environment	3-23
3.7.2 Impacts	3-26
3.7.3 Mitigation	3-28
3.8 Special Status Species	3-31
3.8.1 Affected Environment	3-32
3.8.2 Impacts	3-44
3.8.3 Mitigation	3-49
3.9 Floodplain	3-57
3.9.1 Affected Environment	3-58
3.9.2 Impacts	3-58
3.9.3 Mitigation	3-60
3.10 Land Use	3-60
3.10.1 Affected Environment	3-60
3.10.2 Impacts	3-62
3.10.3 Mitigation	3-62
3.11 Farmland	3-62
3.11.1 Affected Environment	3-62
3.11.2 Impacts	3-63
3.11.3 Mitigation	3-63
3.12 Social and Economic	3-67
3.12.1 Affected Environment	3-67
3.12.2 Impacts	3-68
3.12.3 Compensation	3-70
3.13 Traffic and Transportation	3-70
3.13.1 Affected Environment	3-70
3.13.2 Impacts	3-71
3.13.3 Mitigation	3-72
3.14 Visual	3-72
3.14.1 Affected Environment	3-72
3.14.2 Impacts	3-73
3.14.3 Mitigation	3-73
3.15 Historic and Archaeological Preservation	3-74
3.15.1 Affected Environment	3-74
3.15.2 Impacts	3-75
3.15.3 Mitigation	3-76
3.16 Growth Inducement	3-76
3.17 Short-Term Uses of the Human Environment and Long-Term Productivity	3-80
3.18 Irreversible and Irretrievable Commitment of Resources	3-81
Chapter 4 Cumulative Impacts	4-1
4.1 Cumulative Effects Area	4-1
4.2 Projects Considered in Cumulative Effects Evaluation	4-1

4.3 Cumulative Effects.....	4-5
4.3.1 Biological Resources	4-5
4.3.2 Other Resources	4-11
4.3.3 Cumulative Effects Summary	4-11
Chapter 5 Summary of Public Involvement Process/Tribal Coordination.....	5-1
5.1 Public Involvement	5-1
5.2 NEPA/404 Integration Process	5-1
5.3 Tribal Coordination.....	5-2
Chapter 6 California Environmental Quality Act Evaluation	6-1
6.1 Significant Impacts	6-1
6.1.1 Special Status Species.....	6-1
6.1.2 Wetlands	6-2
6.2 Impacts Mitigated to Less Than Significant	6-2
6.2.1 Biological Resources	6-2
6.2.2 Geology and Soils.....	6-3
6.2.3 Relocations.....	6-3
6.2.4 Water Quality.....	6-3
6.2.5 Other Impacts.....	6-4
6.3 Impacts Found Not Significant	6-4
6.3.1 Noise	6-4
6.3.2 Other Impacts.....	6-4
Chapter 7 List of Preparers and Technical Reports.....	7-1
7.1 Caltrans Contributors	7-1
7.2 Technical Reports	7-3
Chapter 8 Distribution List.....	8-1
Chapter 9 References	9-1
Chapter 10 Index and Glossary	10-1
Appendices	A-1
Appendix A Coordination and Consultation	A-1
Appendix B Comments Received on Draft EIS/EIR	B-1
Appendix C NEPA/404 Concurrence Letters.....	C-1
Appendix D USFWS Biological Opinion; NMFS Concurrence	D-1
Appendix E Final NEPA/404(b)(1) Alternatives Analysis	E-1
Appendix F Wetlands Only Practicable Alternative.....	F-1
Appendix G Summary of Mitigation and Monitoring Commitments	G-1
Appendix H USFWS Species List.....	H-1
Appendix I Relocation Assistance Advisory Service.....	I-1

List of Figures

Figure S-1. Project Vicinity	S-2
Figure 1-1. Project Location	1-2
Figure 1-2. Route 70/149/99 Corridor	1-4
Figure 2-1. Close Access Alternative	2-5
Figure 2-2. Preliminary Alternatives	2-7
Figure 2-3. Design Options Considered and Eliminated	2-9
Figure 2-4. Alternative 1 – Widen to the South.....	2-12
Figure 2-5. Alternative 2 – Widen to the North.....	2-14
Figure 2-6. Alternative 3 – Avoid Butte County Meadowfoam	2-16
Figure 2-7. Typical Cross-Sections.....	2-17
Figure 3-1. Former Gasoline Station Location	3-7
Figure 3-2. Noise Receptors	3-14
Figure 3-3. Summary of Biological Impacts.....	3-20
Figure 3-4. Floodplain Areas	3-59
Figure 3-5. Land Use	3-61
Figure 3-6. Williamson Act Parcels.....	3-64
Figure 3-7. Farmland Impact Form.....	3-65
Figure 3-8. Potential Prime Farmland.....	3-66
Figure 4-1. Routes 70/149 Highway Projects	4-2
Figure 4-2. Areas of Planned Growth.....	4-6

List of Tables

Table S-1. Summary of Impacts by Alternative	S-4
Table 1-1. Level of Service (LOS).....	1-3
Table 1-2. Projected Traffic Demand.....	1-3
Table 1-3. LOS at SR 70/149 and 99/149 Intersections.....	1-5
Table 1-4. Accident Rates	1-5
Table 3-1. Expected Max. 1-Hr & 8-Hr Carbon Monoxide (CO) Concentration (ppm)	3-11
Table 3-2. Traffic Noise Levels	3-13
Table 3-3. Oak Impacts	3-27
Table 3-4. Rare and Sensitive Animal Species	3-33
Table 3-5. Rare and Sensitive Plant Species	3-37
Table 3-6. Salmonid Habitat Impacts.....	3-46
Table 3-7. VELB Impacts	3-47
Table 3-8. Vernal Pool Fairy Shrimp/Tadpole Shrimp Habitat Impacts.....	3-47
Table 3-9. Impacts to BCM.....	3-49
Table 3-10. VELB Mitigation	3-54
Table 3-11. Summary of Mitigation for Special Status Species	3-57
Table 3-12. Population Projections by County	3-78
Table 4-1. Cumulative Effects Corridor Projects	4-3
Table 4-2. Vernal Pool and Swale Impacts	4-7
Table 4-3. VELB Impacts	4-9

Abbreviated Terms

Abbreviation	Term
AB	Aggregate base
ac	acre
AC	asphalt concrete
ACOE	US Army Corps of Engineers
ADT	Average Daily Traffic
APE	Area of Potential Effects (Cultural Resources)
BCAG	Butte County Association of Governments
BCM	Butte County Meadowfoam (special status plant)
BMP	Best Management Practices (Water Quality)
Caltrans	California Department of Transportation
CDFG	California Department of Fish & Game
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide (Air Quality)
dBA	Decibels (noise level measurement)
DEIR	Draft Environmental Impact Report (CEQA document – State)
DEIS	Draft Environmental Impact Statement (NEPA document – Federal)
DGAC	Dense grade asphalt concrete
EA	Environmental Assessment
ES	Edge of shoulder
ESA	Environmentally Sensitive Area
ESA	Endangered Species Act (federal)
ESU	Evolutionarily Significant Unit
ETW	Edge of traveled way
FEMA	Federal Emergency Management Agency
FG	Finished Grade
FHWA	Federal Highway Administration
FL	Flow line
FPPA	Farmland Protection Policy Act
ft	Foot / feet
FTIP	Federal Transportation Improvement Program
ha	Hectare
HMMP	Habitat Mitigation and Monitoring Proposal
HP	Hinge point
HPSR	Historic Property Survey Report (cultural resources)
IS/EA	Initial Study / Environmental Assessment

List of Abbreviated Terms

Km	Kilometer
KP	Kilopost
L _{eq}	Equivalent Noise level
LEDPA	Least Environmentally Damaging Practicable Alternative
LOS	Level of Service
m	Meter
mi	Mile
MTP	Metropolitan Transportation Program
MOU	Memorandum of Understanding
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
NES	Natural Environment Study (Biological Resources)
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOP	Notice of Preparation
NRCS	Natural Resources Conservation Service
OG	Original Ground
OGAC	Open grade asphalt concrete
PG	Profile Grade
PG&E	Pacific Gas and Electric
PM	Postmile
ppm	Parts per million
PRC	Public Resources Code (State)
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
R/W	Right-of-Way
RWQCB	Regional Water Quality Control Board
SACOG	Sacramento Area Council of Governments
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SR	State Route
STIP	State Transportation Improvement Plan
TDM	Travel Demand Management
TSM	Transportation System Management
USC	United States Code
USACOE	US Army Corps of Engineers
USEPA	US Environmental Protection Agency
USFWS	US Fish & Wildlife Service
UST	Underground storage tank (hazardous materials)
Var	Variable
VELB	Valley Elderberry Longhorn Beetle (special status species)

Chapter 1 Purpose of and Need for Project

1.1 Introduction

Caltrans and the FHWA propose to upgrade the 7.5 km (4.6 mi) SR 149 to a four-lane expressway and construct freeway-to-freeway interchanges at the SR 70/149 and 99/149 intersections. The project is located in Butte County, California, beginning 10.5 km (6.5 mi) north of the city of Oroville and ending 14.2 km (8.8 mi) south of the city of Chico (Figure 1-1).

In 1994, representatives from U.S. Fish & Wildlife Service (USFWS), Army Corps of Engineers (USACOE), U.S. Environmental Protection Agency (USEPA), National Marine Fisheries Service (NMFS), FHWA and Caltrans signed a formal Memorandum of Understanding (MOU) to integrate the NEPA process with procedures of the Clean Water Act, Section 404, for projects that require an Individual permit. The aim of this integration was to improve coordination and streamline review of projects. In 1997, Caltrans initiated this “NEPA/404 Process” for the proposed SR 70/149/99/191 project. Pursuant to the implementation guidelines for the NEPA/404 Concurrent Process, Caltrans and FHWA sought concurrence from signatory agencies on the project purpose and need, range of alternatives, and criteria for selection of alternatives. After several meetings and revisions to these items, written concurrence was received from USEPA, USFWS and USACOE in October of 1999 (Appendix C). The need for and purpose of the proposed project are presented in this chapter; discussion of project alternatives may be found in Chapter 2.

1.2 Need for the Proposed Action

Existing Roadway

State Route 149 is an undivided two-lane rural highway, 7.5 km (4.6 mi) in length, with 3.6 m (12 ft) lanes and 2.4 m (8 ft) outside shoulders. It is a connecting link between the four-lane SR 70 freeway north of Oroville and the four-lane SR 99 expressway south of Chico. It serves inter-regional and local commuter traffic (*Caltrans 2000*). Passing movements occur in the opposing traffic stream; therefore as traffic volumes increase, opportunities for passing decrease. Current operating

Figure 1-1. Project Location

characteristics are rated at a Level of Service (LOS) of C:

Table 1-1. Level of Service (LOS)

LOS	Description
A	Primarily free-flow operations. Vehicles are unimpeded in their ability to maneuver in the traffic stream.
B	Reasonably free-flow, free-flow speeds generally maintained. Lowest average spacing between vehicles is 330 ft.
C	Speeds at or near free-flow. Freedom to maneuver within traffic stream is noticeably restricted and lane changes require more vigilance.
D	Speeds begin to decline slightly and density begins to increase with increasing flows. Freedom to maneuver is more noticeably limited, and traffic stream has little space to absorb disruptions.
E	Operation at capacity. Operations at this level are volatile, as there are virtually no usable gaps in the traffic stream. Maneuvering within traffic stream is extremely limited.
F	Breakdown in vehicular flow. Such conditions generally exist within queues forming behind breakdown points. Number of vehicles arriving at a point is greater than the number of vehicles that can move through it.

Source: Transportation Research Board

Capacity Issues

The major traffic pattern on SR 149 is from Oroville to Chico and vice versa. This highway serves as a diagonal link between the SR 70 freeway and SR 99 expressway, and is the only remaining two-lane section of State highway along the corridor between Oroville and Chico. The 7.5 km (4.6 mi) Route 149 section limits capacity, as traffic must transition from the four-lane divided facilities of Routes 70 and 99 to the undivided two-lane SR 149 highway (Figure 1-2). Traffic projections indicate SR 149 will not accommodate future demand at the accepted route LOS C, and in fact the LOS is projected to drop to E by the year 2020. The following table presents projected traffic demand calculated for specific segments of the project:

Table 1-2. Projected Traffic Demand

Segment	Location	Average Daily Traffic (ADT) (No. of Vehicles)		% Increase from 2000 to 2020
		2000	2020	
But-149	Entire length 7.5 km (4.6 mi) between SR 70 and SR 99	18,700	47,000	150%
But-70	70/149 intersection to 70/191 intersection	7,130	14,400	100%
But-99	99/149 intersection to just south of Chico	29,300	58,500	100%

Source: Caltrans Office of Travel Forecasting & Modeling, 3/00

Figure 1-2. Route 70/149/99 Corridor

The following table presents the predicted LOS at the SR 70/149 and 99/149 intersections for the year 2020, for the No Build Alternative:

Table 1-3. LOS at SR 70/149 and 99/149 Intersections

Intersection	Year 2020 LOS, (No Build)
SR 70/149	F
SR 99/149	F

Source: Caltrans Design, 11/01

Safety Issues

Safety concerns exist throughout the SR 70/149/99 corridor due to at-grade intersections and driveways. SR 70 south of SR 149 is a four-lane freeway, and SR 99 north of SR 149 is a four-lane expressway. Vehicles entering SR 149 from these two facilities often encounter stopped traffic as vehicles wait for a break in through traffic to turn onto Route 149, a local road, or a driveway. The SR 70/149 intersection currently has accident rates well above the statewide average:

Table 1-4. Accident Rates

Intersection	3-Year Period	Total Accidents		Fatalities		Total Injuries (includes fatalities)	
		No.	Comparison to statewide avg. *	No.	Comparison to statewide avg.*	No.	Comparison to statewide avg.*
But 70/149	1/1/99 through 1/1/02	28	6.3 times higher	2	25 times higher	8	4 times higher
But-149	1/1/99 through 1/1/02	44	1.2 times higher	3	3.3 times higher	21	1.1 times higher
But 99/149	1/1/99 through 1/1/02	8	.5 % lower	0	--	4	1.1 times higher

* compared to similar facilities

Source: Caltrans Design, 11/02

The following are accident type and number of each for the SR 70/149 intersection for the three-year period, January 1, 1999 to January 1, 2002:

- Broadside: 13
- Hit object: 6
- Rear end: 3
- Sideswipe: 2
- Overturn: 3
- Other: 1

The following are accident type and number of each for the SR 99/149 intersection for January 1, 1999 to January 1, 2002:

- Broadside: 5
- Hit object: 1
- Rear end: 1
- Overturn: 1

The following are accident type and number of each for the 4.6 mi SR 149 for the same period:

- Broadside: 19
- Hit object: 6
- Rear end: 8
- Sideswipe: 5
- Overturn: 3
- Head on: 1
- Other: 2

The majority of accidents at the two intersections and along SR 149 are broadside collisions, resulting from vehicles turning left in front of oncoming traffic.

System Linkage

In 1988 the California Transportation Commission (CTC) requested a corridor study to address transportation needs between Sacramento and Chico. The State Routes 70 and 99 Corridor Study sponsored by Butte County Association of Governments (BCAG) and Sacramento Area Council of Governments (SACOG) was completed in 1990 and identified SR 70 with a connection to SR 149 as the preferred route for upgrades to complete an inter-regional transportation system from Sacramento to Chico.

State Route 149 is an interconnecting link between the urban areas of Chico and Oroville. It is a focus route (part of the Inter-regional Road System identified for investment of State Transportation funds), and a cross-link to lifeline Routes 99 and 70. The 1990 Corridor Study identified SR 70 as the preferred route for upgrades to complete an inter-regional transportation facility from Sacramento to Chico. A gap-closure project along SR 149 is an integral part of this freeway/expressway system. Chico is one of the last remaining urbanized areas in the state that is not directly connected by a continuous four-lane highway system, and is not connected to the State freeway system.

Relationship With Other Modes of Transportation

The following public transit options are available along SR 149:

- Public transit service is provided by Butte County Transit, with eighteen round trips provided daily between Chico and Oroville via SR 149.
- Greyhound bus Lines operates four round-trip buses per day between Sacramento and Chico via SR 149, with a capacity of 47-54 passengers per vehicle.
- Amtrak Motor Coach operates three round-trip buses per day between Sacramento and Chico via SR 149, with a capacity of 44 passengers per vehicle.
- Bicycle and pedestrian access is currently allowed along Routes 149, 99 and 70.

Roadway Maintenance

Existing SR 149 experiences maintenance problems near the junction with SR 70 along the Cottonwood Creek drainage. This area is prone to ponding of water within State right-of-way due to beaver dams blocking the drainage ditch north of the roadway. This has at times been a safety concern, as the water has come within 6 ft of the shoulder. The proposed project would reduce the need for maintenance and improve safety in this area by providing a drainage system to eliminate water ponding within the right-of-way. This drainage system would also accommodate a standard clear recovery zone, which would improve safety.

Structural footings under the Clear Creek Bridge (No. 12-0073) had become exposed due to long-term degradation and scour from water in the channel. This was corrected with a separate project that was completed during the summer of 2002.

1.3 Purpose of the Proposed Project

The objectives of the proposed project are to:

- Improve traffic safety
- Maintain LOS C through the 20-year design period for local commuter and inter-regional traffic by reducing congestion and delays
- Provide a continuous four-lane inter-regional transportation system between Oroville and Chico.

1.4 Project Background

When SR 149 was reconstructed in 1975, it was designed to provide a four-lane expressway with a 70 ft (21.5 m) median, and ultimately a freeway. The 1975 project constructed only two lanes, but purchased right-of-way sufficient to build two additional lanes south of the existing two lanes. Following the 1990 Corridor Study, Caltrans District 3 completed a Project Study Report for the SR 149 improvements in June of 1991, and the project became part of the 1992 District 3 System Management Plan as a gap-closure candidate. In 1992 Butte County included the project in their Regional Transportation Improvement Program (RTIP) and submitted the project to the CTC for funding. In April 1992, the project was funded for construction and added to the Federal Transportation Improvement Program (TIP).

In 1995, in response to requirements of Intermodal Surface Transportation Efficiency Act (ISTEA), the SR 149 improvements were included in a Major Investment Study (MIS), (*BCAG 1995*) that reaffirmed the conclusion of the 1990 Corridor Study, and recommended the project be constructed. Participants from the USACOE and Bureau of Land management (BLM) were invited to participate in this effort and were sent draft documents to review. No comments were received.

In April of 1997, Caltrans and FHWA presented three SR 149 widening alternatives at a meeting which included representatives from USACOE, USFWS, CDFG and the USEPA, in accordance with the NEPA/ 404 MOU for projects that require approval under NEPA, and require an Individual Section 404 permit under the Clean Water Act. The resource agencies present gave verbal agreement for the project purpose and need, and the alternatives presented, but no formal, written concurrence was obtained at that time. In March of 1999, resource agencies expressed concern that the project

purpose was not specific enough, and the range of alternatives was not adequate. Caltrans and FHWA revised these items, and after two NEPA/404 Dispute Resolution meetings, written concurrence was received in October of 1999 from USEPA, USFWS and USACOE for the project purpose and need, range of alternatives and criteria for selection of alternatives (Appendix C). In March of 2001, these resource agencies, along with the NMFS were also informed of a design change that was made to avoid impacts to a historic district (Appendix A).

A Draft Initial Study/Environmental Assessment (Draft IS/EA) was circulated to the public May 15 to June 15, 2001, and a public workshop was held on May 30, 2001. Many individuals expressed support for the proposed project, but a few expressed concerns about impacts to Butte County Meadowfoam. Several resource agencies commented that they felt the project impacts would be substantial, and an EIS/EIR was warranted. After consideration of public and agency comments, FHWA and Caltrans decided to prepare a DEIS/DEIR, and a Notice of Intent and Notice of Preparation stating this decision were sent to federal, regional, State and local Responsible/Cooperating Agencies.

1.5 Project Description

The proposed project would upgrade SR 149 in Butte County to a four-lane expressway, and construct freeway-to-freeway interchanges at the existing SR 70/149 and SR 99/149 intersections (Figure 1-1). Work would include:

- construction of two additional 3.6 m (12 ft) lanes, a 3.0 m (10 ft) outside shoulder, a 1.5 m (5 ft) median shoulder and an 18.6 m to 22 m (60 ft to 72 ft) median for the full length of SR 149 (7.5 km, 4.6 mi),
- realignment of SR 70 between SRs 149 and 191,
- construction of freeway-to-freeway interchanges at the existing SR 70/149 and 99/149 intersections,
- reconstruction of the SR 70/191 intersection,
- construction of driveway access roads,
- rehabilitation of the existing SR 149 roadway,

- construction of county roads including a portion of Shippee Road, Table Mountain Blvd. and the Book Farm Road,
- construction of a drainage system to eliminate ponding within the right-of-way on the north side of SR 149 near the junction with SR 70.

The proposed project would require the acquisition of approximately 118 ha (292 ac) of land. Right-of-way was purchased in 1975 for two additional lanes on the south side of SR 149. This purchase did not include consideration of other widening alternatives, or all areas needed for future interchanges, driveway access roads, or realignment of SR 70 north of SR 149. Three alternatives were considered for widening SR 149. Other project features (interchanges, driveway access roads, improvements to Shippee Road/SR 149 and SR 70/191 intersections, realignment of SR 70) would be the same for each alternative. The estimated project cost varies from \$80 to \$90 million, depending on the alternative chosen. A complete description of alternatives is presented in Chapter 2.

Chapter 2 Alternatives

This chapter discusses the alternatives under consideration for constructing the proposed project, alternatives that have been eliminated, and the No Build Alternative. The first subsection presents the process used to select or eliminate alternatives.

2.1 Alternative Development Process

On December 27, 1993, Caltrans signed an interagency Memorandum of Understanding (MOU) committing to integrating NEPA and Section 404 of the Clean Water Act in transportation planning, programming and implementation stages for projects requiring an individual permit under Section 404. This integration process is referred to as the NEPA/404 Process, or the NEPA/404 MOU. In 1997, Caltrans and FHWA began coordination with federal resource agencies under this process to obtain agreement on the purpose and need for the proposed project, the range of alternatives to be studied, and the criteria for selecting alternatives. Written concurrence for these items was received from USACOE and USFWS on 9/3/99 and from USEPA on 10/8/99 (Appendix C).

As part of the NEPA/404 process, an Alternatives Analysis was completed in May 2000, updated in December 2001, and finalized in November 2002 by the Caltrans District 3 Environmental Branch (Appendix E). Sixteen roadway alternatives, two interchange options and three options for each of four driveway access roads were examined in the analysis. Alternatives and design options that were eliminated are addressed in section 2.1.2, “Alternatives/Design Options Considered and Eliminated.” For the proposed project, three SR 149 widening alternatives, one interchange design and four driveway access roads are being presented.

2.1.1 Criteria for Alternative Selection

During the NEPA/404 process, it was agreed that project alternatives to be evaluated must meet certain criteria to ensure that they would be “reasonable” (NEPA) and “practicable” (Section 404). The following is a list of the criteria that received concurrence from the NEPA/404 process participants:

- Correct existing safety issues at intersections and driveways

- Maintain minimum Level of Service C throughout the project area through the year 2020
- Bring facility continuity to the route by connecting the existing four-lane freeway section to the south with the existing four-lane expressway/freeway section to the north
- Meet long-range inter-regional transportation planning goals by facilitating commuter, commercial and recreation travel
- Minimize impacts to wetlands and other regulated waters and achieve no net loss of wetlands
- Minimize impacts to listed species and other sensitive biological resources
- Minimize impacts to agricultural lands
- Minimize impacts to historic and archaeologically significant sites
- Minimize displacement of existing residences and businesses
- Minimize out-of-direction travel
- Obtain access control
- Maintain reasonable access to existing residences and businesses
- Minimize construction and roadway operation costs.

2.1.2 Alternatives / Design Options Considered and Eliminated

The Alternatives Analysis provides a comprehensive study of numerous alternatives that were considered for addressing the need for highway improvements along the SR 70/149/99 corridor. The following alternatives were evaluated in that analysis and eliminated from consideration based on impacts to resources, feasibility, ability to meet the purpose and need, and cost.

Improvements to Existing Intersections

This alternative would implement safety improvements at the existing 70/149 and 99/149 intersections, with SR 149 remaining a two-lane highway. Numerous

improvements have already occurred at these locations including turn pockets, improved sight distance and lighting, rumble strips, and flashing warning lights. Since no additional improvements are available short of realigning the roadway, this alternative was eliminated from consideration.

Non-Highway Alternatives

Inter-city passenger rail and bus service, as well as Transportation System and Travel Demand Management (TSM/TDM) strategies were examined for their ability to meet the project purpose. (TSM/TDM strategies include improvements to transit, ridesharing, and bicycle and pedestrian services that increase the efficiency of existing facilities.)

In 1996, BCAG prepared a Final Draft of Interim Findings for a Northern Sacramento Valley Inter-city Passenger Rail Study (*BCAG 1996*). This study examined the feasibility of providing passenger rail service from either Sacramento or Roseville north to Marysville/Yuba City, Chico, and Redding. The Findings indicated that the start-up, operation and maintenance costs, funding sources and ridership forecasts were limiting factors that would make this transportation option infeasible in the near future. The decision to not explore this alternative further was unanimously made by Shasta, Tehama, Sutter, Sacramento and Butte Counties.

Butte County Transit currently provides daily bus service between Oroville and Chico. This form of transportation addresses the needs of some local commuters, but does not address inter-regional traffic, the movement of goods and services, or the need for safety improvements at the SR 70/149 and 99/149 intersections. Greyhound Bus Lines and Amtrak Motor Coach currently provide transit service from Sacramento to Chico (and beyond). As ridership on these bus lines is mostly inter-regional, improvements to this service would not adequately address local traffic, safety improvements or the movement of goods and services.

Park and Ride facilities currently exist in Oroville and Chico, and these are used on a regular basis. Improvement/expansion of these facilities would not address safety issues, movement of goods and services or inter-regional traffic in the project area.

There currently are no bicycle facilities/designations along Routes 70, 149, and 99, but cyclists are allowed to use the roadway shoulder.

As stated in the SR 70/99 Corridor MIS, these public transportation improvements can only be expected to address from 2% to 5% of projected travel demand. They would not facilitate movement of goods and services, and would not correct safety concerns. For these reasons, they were not recommended in the MIS. These non-highway alternatives do not meet the purpose and need for the proposed project, and they have been eliminated from consideration.

Close all Access and Close Access Except at Shippee Road Intersection

During NEPA/404 coordination, the USACOE concurred with the range of alternatives to be studied, on the condition that Caltrans and FHWA include an alternative that would eliminate all access to the state routes. The goal of this request was to minimize potential for growth in the corridor. Caltrans examined two alternatives: one with all access points in the project limits closed, and one with all access closed with the exception of an intersection at Shippee Road. These would require the purchase of property adjacent to the project (Figure 2-1). Alternative 3, the Avoid Butte County Meadowfoam alignment, was used for evaluating the impacts of closing access.

The purchase of businesses and right-of-way, and payment of relocation benefits necessary to close access throughout the project area would add approximately \$30 to \$65 million to the cost of the project. This added cost would be considerable, given that the estimated range of project cost, depending on alternative chosen, is \$80 - \$90 million. In addition, the interchanges proposed for the alternatives along SR 149 are already designed for access control. The excessive cost for purchasing property adjacent to the project makes these two alternatives unreasonable, therefore they have been eliminated from consideration.

Construct Interchanges Only Alternative

This alternative would construct freeway-to-freeway interchanges at the 70/149 and 99/149 intersections, but would leave SR 149 a two-lane highway. This alternative would include improvements to the Shippee Road/SR 149 intersection, construction of driveway access roads, realignment of SR 70 north of SR 149, realignment of Table Mountain Blvd, and reconstruction of the 70/191 intersection. The estimated project cost is \$71.7 million

Figure 2-1. Close Access Alternative

This alternative was analyzed in detail in the Alternatives Analysis as requested by the USFWS through NEPA/404 integration. This alternative would not meet the full project purpose and need: concept LOS C for the year 2020 could not be achieved with a two-lane highway, and this alternative would not provide a consistent inter-regional transportation system between Oroville and Chico. In addition, it is not reasonable from an engineering/design standpoint to permanently connect freeway-to-freeway interchanges to a two-lane highway. Safety is lessened with a two-lane highway as compared to a four-lane expressway with median separating opposing traffic. For these reasons, this alternative has been eliminated from further consideration.

Freeway Gap-Closure – Alternate East/West Alignments (4)

Four alternatives were examined to connect SR 70 and SR 99 along east/west alignments other than along SR 149 (Figure 2-2). These alternatives include:

- Freeway/expressway from SR 70 along SR 191 and Durham/Pentz Road to SR 99
- Freeway/expressway from SR 70 along Cottonwood Road to SR 99
- Freeway/expressway from SR 70 along Nelson Avenue to SR 99
- Freeway/expressway from SR 70 along SR 162 to SR 99

These alternatives would not correct safety concerns at the SR 70/149 and 99/149 intersections, and would have greater overall costs, out of direction travel, and greater impacts to wetlands than alternatives along SR 149. In addition, improvements would still be necessary at the SR 70/149 intersection, resulting in additional impacts to sensitive resources. For these reasons, these alternatives have been eliminated from consideration.

Freeway Gap-Closure – Alternate Diagonal Alignment (2)

Two other concepts were considered for connecting SR 70 and SR 99 along a diagonal alignment other than along SR 149. This included:

- Freeway/expressway along diagonal route north of SR 149;
- Freeway/expressway along diagonal route south of SR 149.

Figure 2-2. Preliminary Alternatives

For the same reasons stated for the alternate east/west alignments above, these concepts have been eliminated from consideration.

Wetland Avoidance Alternative

Since the project study area contains numerous wetland resources, any action that improves the roadway would impact wetlands. The only “Wetland Avoidance Alternative” would be a No Build alternative.

Design Options

The following design options considered and eliminated are shown in Figures 2-3.

Trumpet Interchange

This freeway-to-freeway interchange design requires longer driving distances for movements on the structures, requires more right-of-way, and has greater environmental impacts than the direct-connect interchange. For these reasons, it has been eliminated from consideration.

Shippee Road Interchange

The Freeway Agreement for SR 149 includes discussion of a future interchange at Shippee Road. For the proposed project, Caltrans Design staff studied traffic volumes at the intersection, and determined that an interchange would not be warranted based on benefits versus cost.

Warren-Brown Access Road – Connect driveway to Table Mountain Overcrossing

This design option would provide access to the Warren and Brown parcels [Assessor Parcel Numbers (APNs) 041-210-052 and 041-200-041] by connecting the existing driveway to the Table Mountain crossing over SR 70 to the south. This option would have greater wetland impacts than the overcrossing to Openshaw Road, and thus has been eliminated from consideration.

Table Mountain Blvd. Access

Caltrans studied an option that would use existing SR 70 for the new northbound lanes, construct southbound lanes to the west, and realign Table Mt. Blvd along the east side of SR 70 to connect at the SR 70/191 intersection. This option was eliminated as the new Table Mt. Blvd. would be a longitudinal encroachment into the

Figure 2-3. Design Options Considered and Eliminated

Berkeley Olive Association Historic District, which has been found eligible for the National Register of Historic Places.

Another design option would relocate Table Mountain Blvd. to the west side of SR 70, avoiding impacts to the Berkeley Olive Association Historic District on the east side of SR 70. This would involve constructing structures over SR 70 for Table Mt Blvd. and Coal Canyon Road, relocation of three or four Western Area Power Administration high voltage towers, purchase of several parcels (approx. 60 ac) on the east side of SR 70 that would have no access, removal of the Berkeley Olive Association Work Camp Site, and additional wetland and other biological resource impacts. After considering the above items as well as the additional cost (approximately \$4.6 million), this alternative was eliminated.

Caltrans also investigated an alternative that would construct the Table Mountain Blvd. extension completely outside the eastern boundary of the Berkeley Olive Association Historic District. This alternative would require approx. two miles of additional roadway and new structures, and would result in additional environmental impacts and considerable added cost. For these reasons, it too has been eliminated from further study.

Book/Guidici Property Access South

This design option would construct a driveway access road on the west side of SR 99 from the Book and Guidici properties (APNs 040-057-003 and 040-130-011) to south of the SR 99/149 interchange. Since this option would result in greater wetland impacts than the access road to the north, it has been eliminated from further consideration.

Schlaf Property Access North (Fish Farm)

This option would construct an access road on the east side of SR 99 from the Schlaf property (APNs 040-130-040) north to the Durham-Pentz road cul-de-sac. As this option could have impacts to state and federally listed plant species (i.e., Green's tuctoria and Hoover's spurge), it has been eliminated from further consideration.

2.1.3 Alternatives Selected for Detailed Study

Three build alternatives were considered to address the need for improvements along the SR 70/149/99 corridor. These alternatives were a result of the alternatives analysis process outlined in the previous section, and were selected based on several

factors including benefits, capital cost, feasibility, impacts and ability to address the stated project purpose and need.

The No Build Alternative is presented to allow the reader of this document to compare the effects of the build alternatives with a future scenario where no expressway or interchanges are present along SR 149.

2.2 Project Alternatives

The three alternatives that were considered for widening SR 149 to a four-lane expressway are presented below. Other project features (interchanges, driveway access roads) are common to all three alternatives and are presented in Section 2.2.4. Alternatives are shown in Figure 2-4 through Figure 2-6.

2.2.1 Alternative 1 – Widen to the South

Description

This alternative would upgrade SR 149 to a four-lane expressway by adding two lanes on the south side of the existing roadway (Figure 2-4). Widening would begin at the proposed SR 70/149 interchange and end at the proposed SR 99/149 interchange, a distance of 7.5 km (4.6 mi). Estimated cost of this alternative including other project features is \$83 million, and 118.2 ha (292.1 ac) of new right-of-way would be required.

Roadway

Alternative 1 would include the following roadway construction:

- Two 3.6 m (12 ft) lanes with an 18.6 m (60 ft) or 22 m (72 ft) median; 1.5 m (5 ft) median shoulder and 3.0 m (10 ft) outside shoulder,
- realignment of SR 70 between SRs 149 and 191,
- reconstruction of the SR 70/191 intersection,
- construction of driveway access roads,
- rehabilitation of the existing SR 149 roadway,

Figure 2-4. Alternative 1 – Widen to the South

- construction of county roads including a portion of Shippee Road, Table Mountain Blvd. and the Book Farm road,
- construction of a drainage system to eliminate ponding within the right-of-way on the north side of SR 149 near the junction with SR 70.

Structures

Alternative 1 would require the following structures:

- freeway-to-freeway interchanges (direct connector) at the SR 70/149 and 99/149 intersections,
- two-lane bridges with shoulders over Dry Creek, Clear Creek, Little Dry Creek,
- four-lane bridge with shoulders on new SR 70 alignment at Gold Run Creek.

This alternative would also require a one-lane crossing over SR 149 to Openshaw Road for access to the Warren and Brown parcels (APNs 041-210-052, 041-200-041) south of SR 149. This over-crossing would function as a private driveway, with a locked gate provided at the north end. Caltrans would maintain those portions of the structure within State right-of-way, and there are no plans to widen the structure in the future.

2.2.2 Alternative 2 – Widen to the North

Description

Alternative 2 (Figure 2-5) would add two lanes on the north side of existing SR 149 between the proposed SR 70/149 and 99/149 interchanges, covering a distance of 7.5 km (4.6 mi). Estimated cost for this alternative including other project features is \$87 million, and 148.1 ha (365.9 ac) of new right-of-way would be required. Alternative 2 would include the same 7 roadway construction items and 4 structures listed under Alternative 1.

Figure 2-5. Alternative 2 – Widen to the North

2.2.3 Alternative 3 – Avoid Butte County Meadowfoam

Description

Alternative 3 (Figure 2-6) would add two lanes on the north side of SR 149 through an area of Butte County Meadowfoam (*Limnanthes floccosa californica*) from the proposed SR 70/149 interchange to KP 4.1 (PM 2.6), and then widen to the south side from KP 4.1 (PM 2.6) to the proposed SR 99/149 interchange for a total length of 7.5 km (4.6 mi). Estimated cost for this alternative including other project features is \$87 million, and 163.8 ha (404.7 ac) of new right-of-way would be required.

Alternative 3 would include the same 7 roadway construction items and 4 structures listed under Alternative 1.

2.2.4 Common Features of Build Alternatives

Typical cross-sections for the build alternatives are shown in Figures 2-7 A & B. The following features are part of the overall project, and would be included with the selected SR 149 widening alternative. They are shown in Figure 2-4 through Figure 2-6.

Direct Connector Interchange – 70/149 and 99/149 Intersections

This freeway-to-freeway interchange has high design standards, with two of the route-to-route movements on separate structures. It provides the shortest driving distances for movements on the structures, requires the least amount of right-of-way, and produces the fewest environmental impacts. A standard design exception has been approved for the northbound (NB) SR 149 to southbound (SB) SR 99 ramp, and the SB Route 149 to eastbound (EB) Route 70 ramp. The exception would allow one-lane ramps at these locations instead of the standard two-lane ramps. This exception was requested to keep the project within the budgeted scope and cost, as it would free up additional funds to be used to close access points not addressed in the original project scoping document. Projected traffic volumes do not warrant two lanes, and the benefits would exceed the disadvantages of the proposed design exception. These interchanges would be access controlled and would therefore not allow access to adjacent land.

Figure 2-6. Alternative 3 – Avoid Butte County Meadowfoam

Figure 2-7. Typical Cross-Sections

Warren/Brown Over-crossing

This structure would provide a one-lane crossing over SR 149 to Openshaw Road to maintain access to the driveways of the Warren (APN 041-210-052) and Brown (APN 041-200-041) parcels, which would be impacted by the ramps of the SR 70/149 interchange. This over-crossing would function as a private driveway, with no plans for future widening.

Table Mountain Blvd. Access

This project feature would consist of connecting Table Mt. Blvd north of SR 149 to existing SR 70, which would then become a frontage road for the new SR 70 alignment to the west. This frontage road would connect to SR 70 at the realigned SR 191 intersection. This would avoid conflict between the existing Table Mt. Blvd alignment and the proposed SR 70/149 interchange ramps, would improve the operational characteristics of the SR 70/191 intersection, and would maintain access for the parcels on the east side of existing SR 70.

Realignment of SR 70

SR 70 would be realigned approximately 110 m (360 ft) at the widest offset, west of its current location, from SR 149 to SR 191. This would avoid impacts to the Berkeley Olive Association Historic District.

Reconstruction of SR 70/191/Table Mt. Blvd. Intersection

The SR 70/191 intersection would be relocated approximately 50 m east of its current location, and would become a 4-way intersection comprised of north- and southbound SR 70, SR 191 and the realigned Table Mt. Blvd (previous SR 70). This configuration would improve the operational characteristics of the intersection, which would reduce accidents.

Realignment of Shippee Road

Near its intersection with SR 149, Shippee Road would be realigned to the east. This is necessary to allow adequate distance between the intersection and the SR 99/149 interchange. The County would abandon the existing roadway.

Book/Guidici Property Access – North

This project feature would consist of a frontage road on the west side of SR 99 north of the 99/149 interchange. This would maintain access to the Book (APN 040-057-003), Guidici (APN 040-130-011) and Dry Creek Ranch (APN 040-057-004) parcels that would be impacted by the SR 99/149 interchange ramps. This road would continue north to the intersection of Durham/Dayton Highway and Oroville/Chico Highway.

Schlaf Property Access South (Fish Farm)

This project feature would consist of a driveway access road on the east side of SR 99 from just north of the SR 99/149 interchange, southeast to Openshaw Road. This would maintain access to the Schlaf parcel on the east side of SR 149 (APN 040-130-040) which would be impacted by the SR 99/149 interchange ramps.

Schlaf Property Access South (Animal Farm)

This project feature would consist of a driveway access road on the east side of SR 99 from just south of the SR 99/149 interchange to approximately 500 m north of Dry Creek Bridge on SR 99. This would maintain access to the Schlaf parcel on the east side of SR 99 (APN 041-190-027), which would be impacted by the SR 99/149 interchange ramps.

2.2.5 No Build Alternative

Under the No Build Alternative, conditions along the SR 70/149/99 corridor would remain as they currently exist. Route 149 would remain a two-lane highway, and the SR 70/149 and SR 99/149 intersections would remain unchanged. The No Build Alternative would not produce immediate environmental impacts; consequently, no mitigation would be required. However, several roadway maintenance and safety items that would have been corrected with the proposed project would still need to be addressed as separate projects in the near future. This would include rehabilitation of the SR 149 roadway, correction of ponding in the highway right-of-way near the SR 70/149 intersection (see pg. 1-7), scour repair at the Clear Creek Bridge on SR 149, and improvements to the SR 70/191 intersection.

Traffic projections indicate SR 149 would not accommodate traffic demand at the accepted route LOS C in the year 2020, as shown in Table 1-1. The No Build Alternative would not correct existing safety problems at the SR 70/149 and 99/149

intersections, and accident rates at these two locations would likely increase as traffic demand increases.

Section 1.2 presented the LOS, capacity, safety, maintenance and highway system linkage issues (including inter-regional travel) that warrant consideration of the proposed project. The No Build Alternative would not address these needs, and would not meet the objectives of the project.

2.3 Identification of Preferred Alternative

Alternative 3, Avoid Butte County Meadowfoam, has been identified as the preferred alternative under NEPA, and as the Least Environmentally Damaging Practicable Alternative (LEDPA) under Section 404(b)(1) of the Clean Water Act, for the SR 70/149/99/191 Highway Improvement Project. The U.S. Environmental Protection Agency (USEPA) and the U.S. Army Corps of Engineers (USACOE) have concurred with these determinations as required by the NEPA/404 Integration Memorandum (see Appendix C).

Alternative 3 was identified as the LEDPA/preferred alternative as it would avoid direct impacts to Butte County Meadowfoam, and would result in the fewest impacts to aquatic resources and special status species. This alternative would conform to the American Disabilities Act (ADA) of 1990, as appropriate.

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation

This chapter describes the current state of the resources in the project area and identifies the likely impacts of implementing the proposed project. In general, each subsection below will describe the present conditions, discuss the likely impacts of building the proposed project, and indicate what measures would be taken to mitigate those impacts.

3.1 Geology and Soils

3.1.1 Affected Environment

The majority of the study area is flat (1-3 percent slope), with numerous watercourses and rolling terrain. The highest point in the project area is the small table mountain/rock outcropping that occurs in the northeast quadrant of the SR 99/149 intersection. Elevations within the project area generally range from 120-250 feet. Gently rolling hills are punctuated by both narrow and broad swales that are erosional features of what were once Pliocene and Eocene pyroclastic flows. Soils that developed on these old flows are classified in the Tuscan-Anita and Red Bluff-Igo complexes and are underlain by a continuous indurated hardpan. These substances are responsible for the mima-mound topography that forms a network of meandering integrated drainages, and vernal pool and swale habitats (*Caltrans 2000*).

Watercourses and very broad riparian zones are underlain with Great Valley recent river and stream deposits of silt and alluvium. Streams within the project area include Clear Creek, Dry Creek, Little Dry Creek, Gold Run Creek, and Cottonwood Creek. Older sediments make up non-marine deposits that were established during the Pliocene and Pleistocene eras.

There are four major types of soils found in the project area. Primary residual soils originate from subterranean parent rock that has been altered by erosion, weathering and migration. These soils are often found within close proximity to exposed rock outcroppings. Due to the inadequate nutrient supply and shallow soil depth, vegetation coverage is mostly limited to grasslands and used for grazing. This soil type can be found near the SR 70/149 and 99/149 intersections, and at small, scattered

areas along SR 149. Old Valley alluvial soils originate from volcanic parent rock that has been transported and deposited by historic drainage corridors then weathered and modified. These semi-shallow soils have low agricultural and nutrient value and are mainly used for grazing. This soil type is found along SR 149 between drainage areas and along SR 70 north of SR 149. Un-weathered alluvial soils have recently been deposited along existing drainage corridors and floodplains. These soils have not experienced much weathering or modification since deposition and are often rich in nutrients. In a natural environment, these soils are usually identified with riparian or wetland vegetation, and are present along the Gold Run Creek, Dry Creek and Clear Creek drainages, as well as near the SR 70/191 intersection. Intensive agricultural activities are common in this environment. Within the project area, there are two orchards, both of which are located on this soil type. Riverwash – Tailings ‘soils’ are found along existing drainage corridors that have a history of mining and gravel extraction. Grain sizes are normally larger than 1 cm diameter and pioneer plant species such as Cottonwood and Willow are common along these disturbed stream banks. This ‘soil’ type is present in one small area on the east side of the Dry Creek drainage, and near the SR 70/191 intersection.

3.1.2 Impacts

Impacts to soils and geology would occur from construction activities such as grading, leveling, and construction of new roadway in the project area. Impacts would be similar for all build alternatives.

3.1.3 Mitigation

No mitigation is required. Construction measures such as Best Management Practices for soil erosion and water quality, as well as revegetation when construction is finished would minimize impacts to soils within the project area.

3.2 Water Quality and Hydrology

3.2.1 Affected Environment

The proposed project is located in the Central Valley Region (Region V) of the California Regional Water Quality Control Board (RWQCB). It occurs within the Central Valley Basin Plan which lists many beneficial uses for streams and springs in the vicinity of the project including municipal, agricultural, industrial, recreation, warm and cold freshwater habitat, migration, spawning and wildlife habitat and

navigation. The Porter-Cologne Water Quality Control Act of 1969 requires that each RWQCB within the state formulate and adopt water quality control plans or basin plans for all areas in the region. The Clean Water Act as amended in 1972 imposes similar requirements.

The average annual precipitation near the city of Oroville is 32 in, and the region is defined by hydrologic basins that contribute to the Sacramento and San Joaquin River watersheds. The Sacramento and Feather Rivers are the major waterways in the vicinity of the project. Flows generally come from numerous foothill drainages to the Cherokee and Western Canal systems, and eventually flow to the Sacramento River. The Feather River flows westward toward Oroville and then south, crossing SR 70. It is only within the study area near SR 162, near the junction with SR 70.

Surface waters within the project limits include Little Dry, Clear, Dry, Gold Run, Cottonwood and Campbell Creeks, and several of their tributaries. Within the project area, all of these streams are perennial (wet through the entire year); however, some of their tributaries are ephemeral (lasting a short time). All of these waters with the exception of Little Dry Creek flow into the Cherokee Canal approximately 5 mi downstream from the project site. The Cherokee Canal flows into the Butte Sink where it empties into Butte Creek and ultimately into the Sacramento River (both to the west, outside the project area). Little Dry Creek drains southward directly into Butte Creek. Little Dry, Clear and Dry Creek are located within the 100-year floodplain (Zone A) as determined from Flood Insurance Rate Maps (FIRM). The remaining creeks in the project area are outside the 500-year floodplain (Zone X).

Stream watersheds that are present in the project area function as recharge areas for the East Butte aquifer system. There are no sole-source aquifers and no evident public water sources in the project area. There are, however, several residential (individual) wells located in the project vicinity.

The existing storm water runoff from SR 70/149/99 and bridges contributes to the pollutant load of runoff waters entering the creeks and ditches and eventually the Feather River. The actual pollutant loading from the existing State roadway system to the surface waters has not been determined, since site specific data is required to perform such calculations. Storm water runoff from SR/70/149/99 within the study area is only a small fraction of the total quantity of surface runoff draining into the local creeks and ditches and into the Feather River.

The National Pollution Discharge Elimination System (NPDES) program, which is implemented by the State Water Resources Control Board (SWRCB), was established by the USEPA to regulate storm water runoff. The SWRCB issued an NPDES Statewide Storm Water Permit to Caltrans in 1999 (Order No. 99-06-DWQ) (CAS000003) to regulate storm water discharges from Caltrans facilities and to implement a year-round program in all parts of the State to control storm and non-storm water discharges. This Permit allows Regional Water Quality Control Boards to specify additional requirements they may consider necessary to meet water quality standards. In addition, the Statewide Permit requires Caltrans to meet the requirements of the Construction General Permit (Order No. 99-08-DWQ) (CAS000002) that applies to all storm water discharges from land where clearing, grading, and excavation result in soil disturbances of at least 2 hectares (5 acres).

3.2.2 Impacts

The proposed project would require excavation, grading, roadway construction and loss of vegetation, all of which have the potential to result in erosion and adverse impacts to water quality. Work within tributary drainages has the potential to impact water quality in Little Dry, Clear, Dry, Gold Run and Cottonwood Creeks, as well as temporarily alter drainage patterns and cause increases in the rate or amount of surface run-off, erosion or siltation. Construction of new bridge piers would require water diversion measures if water were present at the time of work. Metals, oils, greases and other contaminants from construction could potentially run off-site into surface waters. Due to the increased impermeable surface that would result from a widened roadway, there would be an increase in the amount of water at peak flows. However, the contribution of storm water runoff from the project's impervious area to the entire hydrologic sub-area would be extremely small and would not have a substantial impact. It is assumed that construction practices, and therefore construction-related impacts for any of the build alternatives, would be generally equivalent.

3.2.3 Mitigation

To avoid substantial impacts due to erosion, sedimentation, and introduced pollutants, both temporary (during construction) and permanent erosion control measures would be implemented. These measures would include (but are not necessarily limited to) the following:

- Adverse impacts due to “in-water” construction activities would be avoided, minimized, or rectified by a combination of Caltrans standard specifications and procedures for construction and by additional conditions supplied by permitting and regulatory agencies.

The Caltrans Statewide Storm Water Management Plan (The Clean Water Act (33 USC 1251-1376), as amended by the Water Quality Act of 1987, requires an applicant for any federal permit that proposes an activity which may result in a discharge to waters of the United States to obtain a Section 401 Water Quality Certificate which states that the discharge will comply with other provisions of the Act (ie. will restore and maintain the chemical, physical, and biological integrity of the water). All “in-water” work would comply with conditions of the Section 401 Water Quality Certificate issued for the project by the Central Valley Regional Water Quality Control Board.

- SWMP) requires the assessment and incorporation of appropriate pollution prevention BMPs in every project. An appropriate combination of approved BMPs would be incorporated for the proposed project.
- Construction site Best Management Practices (BMPs) are applied during construction activities to reduce the pollutants in storm water discharge throughout construction. Caltrans would require from its contractors a Storm Water Pollution Prevention Plan (SWPPP) containing effective erosion and sediment control measures. These measures must address soil stabilization practices, sediment control practices, tracking control practices, and wind erosion control practices. In addition to measures such as sediment retention basins, materials handling and storage, spill prevention, and erosion blankets, specific pollution control measures would be included in the project design specifications to limit and minimize erosion, sedimentation and release of chemicals to the water bodies to prevent degradation of water quality during construction. The project plan must also include non-storm water controls, waste management and material pollution controls. It is generally accepted that practices that perform well by themselves can be complemented by other practices to raise the collective level of erosion control effectiveness and sediment retention.
- Disturbed slopes would receive temporary erosion control measures at the end of each work season (prior to November 15). Permanent erosion control measures would consist of seeding and mulching of all disturbed soil areas that would not

be covered by paving. Contract specifications would require the use of California shrub, forb and grass species collected from the project vicinity. A Caltrans Landscape Architect and a District Biologist would develop a revegetation plan. Mulches would be from source materials that would not introduce exotic species.

- Rock slope protection (RSP) would be placed around the abutments of all bridge structures and at the outlets of most culverts. Additional scour protection was placed around piers of the Clear Creek Bridge under a separate project, completed in 2002. New bridge abutments and extended culverts would be placed in-line with existing facilities and would not result in alterations in the flow pattern.

The State Water Resources Control Board (SWRCB) has issued the Caltrans Statewide NPDES Storm Water Permit (Order No. 99-06-DWQ) (CAS000003), adopted July 15, 1999, which covers all Caltrans facilities in the State. In compliance with this permit, the Statewide Storm Water Management Plan (SWMP) was developed by Caltrans to address storm water pollution related to highway planning, design, construction and maintenance activities throughout the State. The SWMP describes the minimum procedures and practices that Caltrans uses to reduce the discharge of pollutants in discharges from storm drainage systems owned or operated by Caltrans. It outlines procedures and responsibilities for protecting water quality at Caltrans facilities, including the selection and implementation of Best Management Practices (BMPs). The proposed project would follow the guidelines and procedures outlined in the SWMP.

3.3 Hazardous Waste Sites

3.3.1 Affected Environment

The foundation of a former gasoline service station dating back to the early 1940s is present within State right-of-way near the junction of SR 70 and SR 149, between SR 70 and Table Mountain Blvd (Figure 3-1). In consultation with the Central Valley Regional Water Quality Control Board (CVRWQCB) and the Butte County Environmental Health Department (BCEHD), Caltrans hired a consultant to remove three fuel underground storage tanks (USTs) from the site in August 2000. Soil sampling performed from February 2001 to August 2002 down-gradient from the former tank locations indicated a small amount of contamination from gasoline, diesel and associated compounds in the soil. Groundwater monitoring at the site and at a

Figure 3-1. Former Gasoline Station Location

domestic well across Table Mountain Blvd. has shown no substantial groundwater contamination (*Geocon 2002*).

Existing bridges along SR 149 at Gold Run, Clear, Dry and Little Dry Creeks were constructed during a period when asbestos and lead-based paint were commonly used in bridge construction. The proposed project would not widen or otherwise alter these bridges; therefore, there would be no risk for exposure to asbestos or lead from these structures.

Construction of the proposed project could result in the demolition of existing houses and/or businesses. These structures could contain asbestos containing materials (ACMs) and/or lead-based paint. Prior to demolition, structures would be inspected to determine the presence/absence of these substances.

Dry Creek runs under SR 149, which is downstream from the former Cherokee Gold Mine. Mercury was used at the mine as part of the mining process. In April 2002 a private consultant completed a site investigation for the presence of mercury within the area. Results from this investigation show that mercury is not present in the Dry Creek drainage in the project area (*PSI 2002*).

3.3.2 Impacts

Depending on final project design, existing houses and/or other buildings could be disturbed or demolished for construction of the proposed project. These structures could contain ACMs and/or lead-based paint. Asbestos can pose a health risk if the fibers become airborne during removal and are inhaled. Dust and paint chips from lead-based paint can pose a health risk if they are inhaled or swallowed.

If final project design determines that any structures would be disturbed or demolished for construction of the project, an Asbestos Hazard Emergency Response Act (AHERA) trained inspector would be hired to determine the presence/absence of ACMs, and a Certified Lead Inspector/Assessor would determine the presence/absence of lead-based paint. Testing would occur soon after the structures are identified.

If final project design determines that the project would disturb the former UST area, special provisions in the construction contract would outline the procedures for testing, removal and disposal of any contaminated soil.

3.3.3 Mitigation

Prior to project construction, structures that would be disturbed or demolished would be evaluated by AHERA-certified inspectors for the presence of ACMs and lead-based paint. If any structures were found to contain these substances, registered asbestos and/or lead abatement contractors would handle debris removal and disposal according to requirements set forth by the California Occupational Safety and Health Administration (Cal-OSHA) and the Butte County Air Quality Management District. The costs for ACM and lead-based paint removal are variable depending upon what is removed (floor tile, shingles, etc.)

If final design identifies that project construction would disturb the former UST area, the soil in the area of disturbance would be tested prior to construction, removed and disposed of by a registered contractor. The cost for removal and disposal of contaminated soil is approximately \$50 -\$100/ton.

3.4 Air Quality

3.4.1 Affected Environment

The proposed project is located in the Sacramento Valley Air Basin and comes under the jurisdiction of the Butte County Air Pollution Control District. As of November 19, 2000 the USEPA designated the status of Butte County for meeting National Ambient Air Quality Standards (NAAQS) regulated under the Federal Clean Air Act as: Unclassified or Attainment for nitrogen dioxide and sulfur dioxide, Non-attainment for ozone, and Attainment for suspended particulate matter (PM 10) and carbon monoxide (Chico urban area is attainment-maintenance for CO). As of November 19, 1999, the California Air Resource Board listed the California designated status of Butte County for meeting the California Ambient Air Quality Standards (CAAQS) as: Attainment for carbon monoxide and sulfates, Non-attainment for ozone, Non-attainment for suspended particulate matter (PM 10), Unclassified/Attainment for nitrogen dioxide, sulfur dioxide, lead and visibility reducing particles, and Unclassified for hydrogen sulfide.

Suspended Particulate Matter (PM 10)

Transportation facilities may generate localized high concentrations of air pollutants ("hot spots"). For the purpose of Transportation Conformity, a project is subject to Hot Spot analysis for impacts that may occur in the immediate vicinity of the transportation facility, as a direct result of facility operation, only if it is located in a

Federal PM 10 non-attainment or maintenance area. Since the proposed project is in an area of attainment for the Federal PM 10 standard, further analysis is not required. The USEPA has proposed new eight-hour PM 2.5 standards, but they have been held up in recent court actions. Attainment/non-attainment areas have not been designated for the new standards.

Butte County is non-attainment for the Federal and State Ozone standards. Ozone is a secondary pollutant, which means it is formed in the atmosphere when nitrogen oxides (Volatile Organic Compounds) are emitted from mobile or stationary sources and mix with sunlight. The regional analysis is in the Regional Transportation Plan (RTP) and the Transportation Improvement Program (TIP). When a transportation project is included in a conforming RTP or TIP, as is the proposed project, then the additional emissions from the project are accounted for and should not create an air quality impact for the region. No further analysis is required.

Structural Asbestos

Within the project limits, several structures are present that could contain asbestos. Depending on final design, some of these structures could be disturbed or demolished for construction of the proposed project.

Naturally Occurring Asbestos

Within the State of California, naturally occurring asbestos is known to exist in serpentine rock that is commonly found in the coast range, Klamath Mountains, and Sierra foothills. Within Butte County, serpentine rock is found in various areas in the foothills. The proposed project is located in the Sacramento Valley, in an area that does not contain any naturally occurring asbestos.

3.4.2 Impacts

Carbon Monoxide

Impacts to carbon monoxide levels were assessed using a micro-scale screening analysis outlined in the “Transportation Project-level Carbon Monoxide Protocol” by the Institute of Transportation Studies, University of California, Davis 1997.

Receptors (houses, businesses) within the project limits would experience CO concentrations well below the 20 parts per million (ppm) California or the 35 ppm Federal one-hour standard, and also below the 9 ppm State and 9 ppm Federal 8-hour standard:

Table 3-1. Expected Max. 1-Hr & 8-Hr Carbon Monoxide (CO) Concentration (ppm)

Distance from Traveled Way (m)	No-Build, 2025 Max. CO (ppm)		Build, 2025 Max. CO (ppm)	
	1hr	8hr	1hr	8hr
15	7.5	5.2	5.6	3.9
30	6.0	4.2	4.7	3.3
60	4.9	3.4	4.1	2.9

Source: Air Quality Report, Caltrans, 2000

The table shows that a Build Alternative would result in lower CO emissions than a No Build Alternative. Slow moving, stop and go traffic releases more CO emissions than free-flowing, faster moving traffic. The proposed project would result in improved traffic flow and lower CO emissions.

The project is in an air quality non-attainment area, which has transportation control measures in the currently applicable State Implementation Plan (SIP). The project is in the most recent conforming BCAG / Federal Transportation Improvement Plan (FTIP) dated September 2000, the Metropolitan Transportation Plan (MTP), and BCAG's 2001 RTP. The design and scope of the project have not changed from what was included in the MTP and FTIP; consequently, no project-level interagency consultation has been necessary. No CO violations were identified within the area affected by this project, and analysis demonstrates that this project would not cause any new violations. Therefore, this project is found to be in conformity with the SIP.

Construction activities can cause temporary impacts to local air quality. Emissions would result from earthmoving and use of heavy equipment during excavation, cut and fill operations and roadway construction. These emissions vary depending on work being done and weather conditions.

Structural Asbestos

After final project design, any houses and/or businesses that would be disturbed or demolished to facilitate project construction would be inspected to determine the presence/absence of asbestos.

3.4.3 Mitigation

Temporary impacts during construction would be minimized by requiring the contractor to utilize Standard Best Management Practices (BMPs) in accordance with Section 7-1.01F (Air Pollution Control) and Section 10.1 (Dust Control) of the current Caltrans' Standard Specifications, which also require compliance with Butte County Air Quality District's Fugitive Dust Emission Rule 207.

Structural Asbestos

If any structures that would be disturbed during construction were found to contain asbestos, the required notification would be made to the Butte County Air Quality Management District, and a certified contractor would handle debris removal and disposal.

3.5 Noise

3.5.1 Affected Environment

Noise levels in the project vicinity are dominated by traffic on SRs 70, 149 and 99. Existing land use consists primarily of undeveloped land, agricultural land, one business and a few homes.

To describe existing and projected noise levels due to traffic, Caltrans uses Sound-32, a traffic noise prediction model. The Sound-32 model was developed to predict hourly L_{eq} (see glossary) values for traffic conditions, and the model is considered accurate within 1.5 decibels (dBA). This model is the Caltrans version of the two federal (traffic noise) programs STAMINA 2.0 and OPTIMA.

A baseline for the existing noise environment in the project area was established by conducting short-term noise monitoring near the SR 70/149 intersection. Sound level measurements were conducted on May 30, 2000 using a Bruel & Kjaer type 2238 Mediator sound level meter, located 1.5 m above the ground. The sound level meter was calibrated using a Bruel & Kjaer type 4231 calibrator before and after use to comply with the American National Standards Institute (ANSI) standard S1.4-1971 for Type 1 (precision) sound level meters.

Sound level measurements were taken at five residential receptor (house) locations (Figure 3-2, receptors 1-4, 6): three at the SR 70/149 intersection, one on the west side of SR 70 near SR 191, and one on the south side of SR 149 east of Shippee

Road. Measurements were also taken at one commercial (business) location at the intersection of SR 149 and Openshaw Road (Figure 3-2, receptor 5).

3.5.2 Impacts

Based on roadway geometrics of the proposed project and the future traffic volumes provided by Caltrans Office of System Planning and Travel Forecasts, future traffic noise levels were calculated for the build and no-build alternatives. Table 3-2 shows existing and predicted noise levels:

Table 3-2. Traffic Noise Levels

Receptor I.D. #	Existing Noise Level	No Build 2025 Leq(h) dBA	Build 2025		NAC ¹ Category	Approaches or Exceeds NAC ²
			Leq(h) dBA	Increase		
1	63	67	69	6	Residential	yes
2	60	67	69	9	Residential	yes
3	62	70	68	6	Residential	yes
4	60	60	62	2	Residential	no
5	63	69	70	7	Commercial	no
6	56	57	59	3	Residential	no

- 1 NAC is the Noise Abatement Criteria (NAC) as defined in Title 23 Code of Federal Regulations (CFR) Part 772
- 2 The NAC is based on Title 23 CFR 772: Abatement to be considered when predicted noise levels approach or exceed the NAC. The NAC for residential is Leq(h) 67 dBA, and an "approach" impact would occur when noise levels are within 1 dBA of this level, i.e., 66 dBA. The NAC for commercial it is Leq(h) 72 dBA.

With the build alternative, the three residences at the SR 70/149 intersection (receptor #s 1-3) could experience increased sound levels approaching or exceeding the residential Noise Abatement Criteria of 67dBA at which level abatement must be

Figure 3-2. Noise Receptors

considered. However, the No Build alternative would also meet or exceed the NAC level at these three residences. Noise levels at the other receptor locations would not approach or exceed the NAC. There would be no substantial noise impacts with either the build or no build alternatives.

Construction of a 3 m (10 ft) soundwall at the SR 70/149 intersection (indicated as SW-1 on Figure 3-2) would abate noise levels at least 5 dBA, meaning the abatement is feasible. Based on reasonableness criteria it was calculated that a total of \$35,000 could be spent per benefited residence for the soundwall (*Caltrans 1998*). Three residences would benefit from this wall, which means that the total soundwall cost could not exceed \$105,000. Based on the project engineer's estimate, the actual cost of this soundwall would be \$620,000, which substantially exceeds the allowable cost of \$105,000 calculated according to the reasonableness criteria. Consequently, a soundwall is not recommended for these receptors, as it would not be a reasonable expense.

Interior noise insulation and/or double-glazed windows may be provided when severe traffic noise impacts are anticipated and normal abatement measures are physically not feasible or are economically unreasonable. When considering these extraordinary abatement measures, it must be demonstrated that the affected activities experience traffic noise impacts to a far greater degree than other similar activities adjacent to highway facilities, i.e., private residential dwelling units having after-project exterior noise levels of 75 dBA, $L_{eq}(h)$, or more, or the project causes a noise level increase of 30 dBA or more over predicted noise levels if no project was constructed (*Caltrans 1998*). The proposed project would not result in severe noise impacts.

Table 3-2 shows that the No Build Alternative is predicted to meet the NAC level (67 dBA) in the year 2025 at receptors 1 and 2, and exceed it at receptor 3. Table 3-2 also shows that the projected noise levels at the three residences for the Build Alternatives would only be 2 dBA higher than the levels for the No Build Alternative. A difference of 2 dBA is generally not perceptible to humans (*Caltrans 1998*) and is not considered a substantial increase. The proposed project would not result in substantial noise impacts.

3.5.3 Abatement/Mitigation

Abatement measures are not proposed as they fail to meet the reasonableness criteria. The proposed project would not result in substantial noise impacts, therefore no mitigation is proposed.

3.6 Wetlands and Waters of the U.S.

Wetlands are defined as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions.” The term “other waters of the U.S.” includes seasonal or perennial waters (creeks, lakes or ponds) and other types of habitats that lack one or more of three technical criteria for wetlands (soil, hydrology, vegetation). The USACOE has authority under Section 404 of the Clean Water Act to regulate activities that could discharge fill or dredge material into, or otherwise adversely modify these resources. Permits issued by USACOE require mitigation to offset impacts to ensure “no net loss” of wetland acres or value. An Individual Section 404 Permit is required for projects that would result in substantial impacts to wetlands, and a detailed alternatives analysis that presents anticipated impacts to aquatic resources and proposed and listed special status species must be prepared in compliance with the Section 404(b)(1) Guidelines (Appendix E).

For the proposed project, wetlands were classified into six principal types based on vegetation composition and hydrologic regime: vernal pools, vernal swales, freshwater marsh, mixed riparian, wetland roadway drainages, and other wetlands. All wetlands within the study area were delineated according to the USACOE Wetland Delineation Manual (*ACOE 1987*).

3.6.1 Affected Environment

Jurisdictional Wetlands

Jurisdictional wetlands meet the hydrology, soil and vegetation criteria of the USACOE Federal Wetland Delineation Method (*USACOE 1987*). All resources meeting the criteria were mapped within 250 ft of the proposed cut/fill lines using aerial interpretation and Global Positioning Satellite (GPS) technology. Delineations were performed in 1992 by a consultant, and in 1997, 1999 and 2001 by Caltrans.

Vernal Pools and Swales - Vernal pool and swale complexes are widespread, with the highest quality habitat and highest density occurring in the vicinity of Gold Run Creek and along the north side of SR 149 between Clear Creek and the SR 99/149 intersection (Figure 2-4 through Figure 2-6). These pools are of the “mudflow type,” occur as shallow depressions underlain by hardpan or claypan soils on plains punctuated by undulating “mima” mounds that rise 0.9 – 1.5 m (3-5 ft) above the pool bottom, and are associated with a series of interconnecting swales. These depressions

fill with water during a brief (2-4 month) period in the winter, and support a group of endemic plants found in no other region or habitat. The characteristic species include: annual hairgrass (*Deschampsia danthonioides*), goldfields (*Lasthenia platycarpa*), toad rush (*Juncus bufonius*), white-headed navarretia (*Navarretia leucocephala*), stalked popcorn flower (*Plagiobothrys stipitatus* var. *micranthus*), and coyote thistle (*Eryngium vaseyi* var. *vallicola*).

Vernal pools are a unique and important resource due their limited distribution, endemic flora and fauna and habitat for many of California's special status species. Because of these values, the USFWS has determined that these wetlands should be placed in Resource Category 2, which designates habitat that is of high quality for evaluation species and is relatively scarce or becoming scarce on a national basis or in the eco-region. The mitigation goal for habitat in Category 2 is "no net loss of in-kind habitat value."

Freshwater marsh – This habitat occurs throughout the project area in association with seeps and vernal pool and swale habitat, along slow-moving creeks and in artificial settings such as stock ponds and roadway drainage ditches. These marshes are vegetated wetlands dominated by non-woody herbaceous plants, and stay wet longer into spring and tend to be deeper than vernal pools. They are dominated by Baltic rush (*Juncus balticus*), creeping spikerush (*Eleocharis macrostachya*), tall flatsedge (*Cyperus eragrostis*), sedge (*Carex nebraskensis*), lady's thumb (*Polygonum persicaria*), dallisgrass (*Paspalum dilatum*) and rabbit's foot-grass (*Polypogon monspeliensis*). They provide functional value for flood control and storm damage prevention, sediment trapping, pollution abatement and potential groundwater recharge. They are also a valuable resource for waterfowl and other wildlife.

Mixed riparian - This is a wetland resource type that contains elements of Great Valley Oak Riparian Forest, Great Valley Willow scrub and freshwater marsh. Large areas of this habitat occur near the SR 70/149 intersection in association with Gold Run and Cottonwood Creeks and their tributary drainages, along Dry Creek from SR 149 upstream along Openshaw Road, and in association with Little Dry and Clear Creeks. Species present in this habitat include willow (*Salix bonplandiana* and *S. gooddingii*), Fremont's cottonwood (*Populus fremontii*), white alder (*Alnus rhombifolia*), valley oak (*Quercus lobata*), and narrow-leaved willow (*Salix exigua*), along with grasses, sedges and spikerush.

Other wetlands - These are areas that meet soil, hydrology, and vegetation criteria for wetland delineation, but do not fall within a described community type. Other wetlands within the project area include pastures and other agricultural fields that have altered hydrology and topography. Species present include grasses, and a combination of vernal pool and freshwater marsh species.

Catfish and Exotic Animal Farm – The project area contains ponds that were created for commercial raising of catfish or for exotic wildlife. The ponds are located on the northeast and southeast of the SR 99/149 intersection. There are approximately 76 ponds and a small water treatment facility. Several ponds are filled with water and contain marsh or mixed riparian resources along the periphery. The majority of the ponds, however, are not filled with water or are in use. Many of the drained ponds contain marsh and vernal pool/swale resources that meet the Federal wetland criteria.

Roadway Drainages – Roadway drainages are excavated in dry land and created as part of the roadway facilities. These facilities carry water off the highway into roadside drainages and ultimately into created basins or natural waterways. Roadway drainages are ephemeral, except where natural flows are augmented, such as at the exotic animal farm, cat fish farm and near agricultural activities. Associated species include nut sedge (*Cyperus eragrostis*), verbena (*Verbena officinale*), seep monkey flower (*Mimulus guttatus*), Dallisgrass (*Paspalum distichum*), rabbitsfoot grass (*Polypogon monspeliensis*) and lady's thumb (*Polygonum persicaria*). Shallow depressions in roadside ditches are characterized by vernal pool and swale species such as stalked popcorn flower (*Plagiobothrys stipitatus* var. *micranthus*), navarretia (*Navarretia leucocephala*) and wooly marbles (*Psilocarphus brevissimus*). Resources in drainage ditches meeting Federal wetland criteria and identified as part of a natural drainage were delineated as jurisdictional wetlands.

Jurisdictional Non-Wetland Waters

These resources fall under the jurisdiction of the USACOE, but do not meet federal wetland criteria for hydrology, soil and vegetation.

Unvegetated Channel – The project area includes numerous named drainages such as Campbell, Gold Run, Cottonwood, Dry, Clear and Little Dry Creeks, and associated tributaries and unnamed drainages. These waterways vary from ephemeral flows lacking channel vegetation, to larger drainages such as Gold Run, Cottonwood or Dry Creeks with perennial flow and diverse floodplain landscapes.

3.6.2 Impacts

Figure 3-3 summarizes direct impacts to wetlands and other waters of the U.S. for the three alternatives. Permanent impacts were determined as the areas within roadway cut and fill lines. Temporary impacts were determined for the additional area that would be utilized for construction activities. The entire area within the interchanges was considered permanently impacted although most of the area could be restored following construction. For Alternative 3, the preferred alternative, total impacts to U.S. waters would be 8.95 ha (22.12 ac). Impacts to wetlands would be 8.69 ha (21.47 ac). Impacts to other waters would be 0.26 ha (0.64 ac) and would occur primarily at the major streams including Gold Run, Cottonwood, Clear, Dry, and Little Dry Creeks.

Caltrans and FHWA examined two design variations for median width (22 m and 18.6 m) for widening of the SR 149 section of the project. The total impact to jurisdictional waters would be similar for the two variations because the right-of-way and construction footprint is approximately the same. Temporary impacts, however, could be slightly greater for the 22 m median.

Alternative 3 would have the least impact to all types of wetlands and other waters of the U.S. with an area of 8.95 ha (22.12 ac). Alternative 1 would have similar total impacts [9.48 ha (23.32 ac)] but greater impacts to vernal pool and swale wetland types (3.37 ha versus 2.63 ha for vernal pools/swales). Alternative 2 would have the greatest impact to all types of wetlands and other U.S. waters. Impacts to the vernal pool and swale wetland types were similar for Alternatives 1 and 2 (3.37 ha and 3.30 ha). For all alternatives, the majority of impacts to vernal pools and swales would occur along SR 149 from Cottonwood Creek north to the SR 149/99 interchange, with the greatest concentrations between Cottonwood Creek and Shippee Road.

Alternatives 2 and 3 would have greater impacts to the large freshwater marsh associated with Cottonwood Creek. There are, however, opportunities for on-site and in-kind mitigation for impacts to the marsh. Impacts to other waters would be greatest for Alternative 2, and least for Alternative 1.

Based on the evaluation of alternatives, and the identification of Alternative 3 as the preferred alternative/LEDPA, it has been determined that there is no practicable alternative to the proposed new construction in wetlands. A Wetlands Only Practicable Alternative Finding pursuant to Executive Order 11990 is presented in Appendix F.

Figure 3-3. Summary of Biological Impacts

3.6.3 Mitigation

Caltrans and FHWA, in cooperation with CDFG, USACOE, USFWS and USEPA, have developed a Habitat Mitigation and Monitoring Proposal (HMMP) that includes compensation for unavoidable impacts to jurisdictional waters of the United States. The HMMP provides specific details on site location, design and construction of wetland habitats, success criteria, maintenance and monitoring plan, and remedial actions for performance criteria that are not met. Appropriate mitigation ratios have been established and would be confirmed through the Section 404 permit process to ensure no net loss of wetland acreage or habitat function and values. Appendix G, Summary of Mitigation and Monitoring Commitments, contains a summary of the HMMP.

Butte County is also developing a Habitat Conservation Plan (HCP) that would designate certain areas within the County as protected from development. This plan is being developed to address cumulative impacts of the proposed project and other projects within the County.

Vernal Pools and Swales: Vernal pools and swales provide habitat for federally listed vernal pool crustaceans. Mitigation measures have been developed in coordination with the resource agencies to compensate for project impacts to vernal pool fairy shrimp and tadpole shrimp habitat. Preservation of habitat at a 2:1 ratio and creation of habitat at a 1:1 ratio would mitigate permanent impacts to these resources. This would be accomplished by preserving 37.5 ha (92.7 ac) of habitat at a USFWS-approved mitigation bank or purchase of a conservation easement at a 3:1 ratio, and creating 11.87 ha (29.33 ac) of habitat at a USFWS/USACOE-approved site to ensure “no net loss” of habitat. Mitigation for temporary impacts to 0.38 ha (0.94 ac) of vernal pools and swales would consist of restoring the impacted area on-site at a ratio to equal “no net loss” of habitat.

Mixed Riparian, Marsh, Other Wetlands, Wetland Roadway Drainages: Impacts to these resources would be mitigated either on or off-site, or at an approved mitigation bank to ensure no net loss of habitat. The compensatory ratio is based on the type and quality of wetland habitats that are filled or disturbed by the project. The following impacts and mitigation are based on the Alternative 3 and have been developed through coordination with the USACOE, USFWS, NMFS, USEPA, and CDFG:

<u>Impact</u>	<u>Mitigation</u>
Mixed Riparian [0.97 ha (2.4 ac)];	Re-vegetate impacted areas at creek crossings and at created marsh habitat at a 1.5:1 ratio for a total of 1.46 ha (3.56 ac)
Freshwater Marsh [2.7 ha (6.7 ac)];	Create 4.05 ha (10.0 ac) of habitat (1.5:1 ratio) on-site, adjacent to beaver pond area
Other Wetlands [0.47 ha (1.16 ac)];	Create in-kind at a 1.5:1 ratio for a total of 0.71 ha (1.74 ac) at the location for vernal pool shrimp species mitigation
Roadway Drainage [1.17 ha (2.9 ac)];	Replace drainage ditches in-kind, on-site.

Opportunities exist to mitigate wetland and other waters impacts in the vicinity of the SR 70/149 interchange where substantial wetland habitat would remain. Caltrans and FHWA are investigating several mitigation areas both on and off-site that would provide opportunities for preservation and creation of habitat. Mitigation would include the following:

1. Final design would, within safe and prudent limits, reduce cut and fill slopes to minimize impacts to wetland and riparian resources.
2. Resources outside the work area would be designated as ESAs, to be protected during construction. These would be shown on project plans and marked in the field with temporary fencing to provide a visual and physical barrier.

3.7 Vegetation, Fisheries, and Wildlife

This section presents information on vegetation, fisheries and wildlife that could occur within the project area and/or be impacted by the proposed project, but do not have a special status designation, i.e., are not considered rare, threatened or endangered within the State or region by local, State or federal resource agencies. Special status species that could occur in the project area and/or could be affected by the proposed project are discussed in Section 3.8.

3.7.1 Affected Environment

Plant Communities

Three hundred thirty (330) taxa of vascular plants, representing about 70 families, occur within the SR 149 study area. The plant inventory indicates relatively low biodiversity (*BioSystems 1993*) and high incidence of weedy and/or non-native species in the study area. The composition and diversity of plant species found in the project corridor is similar to that of grassland habitats throughout the state, and characteristic of grasslands where long-term agricultural and grazing activities have occurred. State-listed noxious weeds (and numerous other weedy species) occur throughout the project area, and are well established in the vegetation and seed bank.

Agricultural Land – Agricultural lands (row crops, rice fields and orchards) are present throughout the study area. Olive orchards occur on both sides of SR 70 just north of the junction with SR 149. Fruit orchards are found along the south side of SR 149 on both sides of Shippee Road, and along SR 99 between Dry Creek and Cottonwood Road. Row crops occur on the south side of SR 149 west of Dry Creek and along the west side of SR 99 between Durham/Pentz Road and SR 149. Flooded rice fields along the west side of SR 99 north of SR 149 provide important resting and feeding areas for waterfowl.

Disturbed non-native grassland – Roadside vegetation throughout the project limits is composed of disturbed non-native grassland that is dominated by exotic annual grasses and forbs. This ruderal vegetation is typical of the highway cut and fill slopes and is generally limited to a 7.6 – 15 m (25-50 ft) area immediately adjacent to the roadway. Wider areas occur at intersections and where additional land alterations have occurred. The dominant plants are yellow star thistle (*Centaurea solstitialis*), wild oats (*Avena barbata*), ripgut brome (*Bromus diandrus*), rye (*Lolium multiflorum*), chicory (*Cichorium intybus*), prickly lettuce (*Lactuca serriola*) and vetch (*Vicia sativa var. sativa*).

Annual Grassland – The most common vegetation type in the project area is annual grassland. It is present throughout the project limits within the vernal pool and swale complexes that are present along SR 149 and portions of SR 99, and is associated with the rock outcropping in the vicinity of the SR 99/149 intersection. This vegetation type contains many of the same species as disturbed non-native grassland, but it generally has a lower proportion of invasive exotics and contains a variety of native plant species. These grasslands contain many native species such as lomatium (*Lomatium caruifolium*), popcorn flowers (*Plagiobothrys* spp./*Amsinckia* spp.), wine

cup clarkia (*Clarkia purpurea* ssp. *quadrivulnera*), shooting stars (*Dodecatheon clevelandii* ssp. *patulum*), and numerous bulbs of the genera *Allium*, *Brodiaea*, *Dichelostemma* and *Triteleia*. Grassland communities provide habitat for a variety of birds, reptiles and small mammals. Wildlife uses are likely high in the grassland areas adjacent to vernal pools and riparian areas, but values decrease near existing roadways.

Oak Woodland – Within the project limits, oak woodlands occur on old terraces adjacent to riparian corridors, primarily along SR 70 between SR 191 and SR 149, and interspersed with mixed riparian vegetation along Cottonwood and Dry Creeks. Most of the study area contains soil with hardpan, which prevents the establishment of oaks. Some do occur as individual trees or as stands within the annual grasslands. The dominant species is valley oak (*Quercus lobata*), but interior live oak (*Q. wislizenii*) and blue oak (*Q. douglasii*) are also present. Grazing and land alteration activities have eliminated much of the native understory species and reduced regeneration potentials. Oak woodlands provide habitat for a variety of birds, reptiles and small mammals. These woodlands are structurally more diverse than grassland and support a greater diversity of species.

Invasive Species/Noxious Weeds – Grassland habitats in the project area contain numerous species that have been identified by the California Department of Food and Agriculture as noxious weeds. There are eight “C” rated species, this being the lowest threat ranking: yellow starthistle (*Centaurea solstitialis*), Russianthistle (*Salsola kali*), St. Johnswort (*Hypericum perforatum*), field bindweed (*Convolvulus arvensis*), puncturevine (*Tribulus terrestris*), bermudagrass (*Cynodon dactylon*), Johnsongrass (*Sorghum halpense*) and medusahead (*Taeniatherum caput-medusae*). For this ranking, the State recommends eradication only when found in a nursery, and actions to retard spread are at the discretion of the county commissioners. There are six additional plants in the study area that are identified on the State Noxious Weed Index, but are “non-rated.” These species are bullthistle (*Cirsium vulgare*), common groundsel (*Senecio vulgaris*), loosestrife (*Lythrum hyssipifolia*), ladythumb (*Polygonum persicaria*), nightshade (*Solanum americanum*), and witchgrass (*Panicum capillare*).

Fisheries

The following fish species have the potential to be present in creeks within the project area:

- Sacramento Pikeminnow (*Ptychocheilus grandis*)
- Sacramento Sucker (*Catostomus occidentalis*)
- Largemouth Bass (*Micropterus salmoides*)
- Bluegill (*Lepomis macrochirus*)
- Sacramento Perch (*Archoplites interruptus*)
- Catfish (*Ictalurus* sp.)
- Carp (*Cyprinus carpio*)

If present, any/all of these species could be affected by construction activities in or adjacent to streambeds.

Wildlife

The following mammalian species could potentially occur within the project area, and could be affected by the proposed project:

- Pacific Fisher (*Martes pennanti pacifica*)
- Virginia Opossum (*Didelphis virginiana*)
- Northern River Otter (*Lontra canadensis*)
- Mountain Lion (*Puma concolor*)
- Striped Skunk (*Mephitis mephitis*)
- Common Porcupine (*Erethizon dorsatum*)
- Coyote (*Canis latrans*)
- American Beaver (*Castor canadensis*)
- California Ground Squirrel (*Spermophilus beecheyi*)
- Mule Deer (*Odocoileus hemionus*)
- Raccoon (*Procyon lotor*)
- Red Fox (*Vulpes vulpes*)
- Grey Fox (*Urocyon cinereoargenteus*)
- Bobcat (*Lynx rufus*)
- Ringtail Cat (*Bassariscus astutus*)
- Cottontail Rabbit (*Sylvilagus* sp.)
- Jackrabbit (*Lepus* sp.)
- Muskrat (*Ondatra zibethicus*)
- Miscellaneous rodents

The following avian (bird) species could potentially occur within the project area, and could be affected by the proposed project:

- American Goldfinch (*Spinus tristis*)
- American Kestrel (*Falco sparverius*)
- Bald Eagle (*Haliaeetus leucocephalus*)
- Belted Kingfisher (*Megasceryle alcyon*)
- Bewick's Wren (*Thyromanes bewickii*)

- Black Phoebe (*Sayornis nigricans*)
- Common Raven (*Corvus corax*)
- Downy Woodpecker (*Dendrocopos pubescens*)
- European Starling (*Sturnus vulgaris*)
- Golden Crowned Sparrow (*Zonotrichia articapilla*)
- Great Blue Heron (*Ardea herodias*)
- Great Egret (*Ardea albus*)
- Greater Yellowlegs (*Totanus melanoleucus*)
- Green Heron (*Butorides virescens*)
- Horned Lark (*Eremophila alpestris*)
- House Wren (*Troglodytes aedon*)
- Killdeer (*Charadrius vociferus*)
- Magpie (*Pica nuttalli*)
- Marsh Wren (*Telmatodytes palustris*)
- Northern Harrier (*Circus cyaneus*)
- Nuttall's Woodpecker (*Dendrocopos nuttallii*)
- Osprey (*Pandion haliaetus*)
- Red-shouldered Hawk (*Buteo lineatus*)
- Red-tailed Hawk (*Buteo Jamaicensis*)
- Rock Wren (*Salpinctes obsoletus*)
- Snowy Egret (*Leucophoyx thula*)
- Song Sparrow (*Melospiza melopia*)
- Turkey Vulture (*Carthartes aura*)
- Western Meadowlark (*Sturnella neglecta*)
- Western Scrub Jay (*Aphelocoma californica*)
- Willow Flycatcher (*Empidonax trailii*)
- Yellow Warbler (*Dendroica petechia*)

3.7.2 Impacts

Plant Communities

Agricultural Land: Impacts to agricultural lands are discussed in Section 3.11, Farmland.

Oak woodlands: For all three build alternatives, the majority of the impact to oak specimen trees and oak woodland would occur within the SR 70/149 interchange construction limits. Within this area, from 27 to 43 oaks and approximately 0.55 ha of woodland would be impacted. Alternative 2 would impact additional trees and oak woodland due to encroachment into the resources of the Dry Creek floodplain. The following table presents impacts for the three build alternatives:

Table 3-3. Oak Impacts

Alternative	Specimen Trees		Oak Woodland	
	No.	dbh (in)	ha	ac
1 – Widen South	31	512	0.52	1.28
2 – Widen North	43	684	0.53	1.31
3 – Avoid BCM	29	456	0.55	1.37

dbh=diameter at breast height

Source: Revised NES, Caltrans 2002

Senate Concurrent Resolution 17 – Oak Tree Protection (SCR 17), which became effective September 1, 1990, states that State agencies should make every effort to protect and avoid impacts to oak woodlands. Oaks in the project area meet the “oak woodland” definition in SCR 17, which requests State Agencies having land use duties and responsibilities to assess the effects of their decisions on any native oak woodlands. SCR 17 also states that native oak woodlands should be preserved and protected, or provisions made for replacement plantings where designated species (blue and valley oak) are removed. The CDFG considers oak woodland habitat as a sensitive resource, requiring mitigation to replace trees removed.

Invasive Species – The proposed construction project would alter the topography and remove vegetation, opening up areas and providing the opportunity for the establishment of introduced or weedy species. Weedy species could also be introduced from vehicles during construction, in materials, or from erosion control, landscape or wildflower plantings. Highway corridors and drainages could provide opportunities for the movement of invasive species through the landscape.

Due to the abundance of weeds in the existing right-of-way, it is assumed that the species currently present would re-establish to similar conditions at the completion of construction. Eradication or control, especially with weedy vegetation surrounding the right-of-way, is not feasible without rigorous, long-term actions. However, measures could be implemented to prevent the introduction of new species, reduce the spread of existing species and promote the establishment of the native flora.

Fisheries

Impacts to the resident fish population could include:

- Loss of or limitation of fish passage
- Temporary destruction of riparian habitat
- Streambed modification

- Temporary increase in siltation and erosion
- Temporary loss of non-natal rearing habitat
- Introduction of non-native vegetation
- Aquatic habitat degradation

Wildlife

Impacts to mammalian species that may be found within the project area could include temporary disturbance of:

- Riparian habitat
- Freshwater marsh habitat
- Aquatic habitats
- Foraging habitat

Impacts could also include:

- Temporary increase in siltation and erosion
- Increased encroachment into native habitats resulting in loss of life due to road kill
- Permanent loss of foraging habitat

Impacts to avian species could include:

- Temporary disturbance/loss of nesting and roosting sites and foraging habitat within riparian and freshwater marsh habitat
- Temporary disturbance/ loss of foraging habitat within aquatic habitats
- Permanent loss of habitat

3.7.3 Mitigation

Plant Communities

Oak Woodlands – Measures would be incorporated into the proposed project to protect trees outside the designated work area during construction, minimize the number of oaks that would be removed, and mitigate for oak woodland habitat impacted. A replacement ratio of one oak seedling or sapling planting for each inch of specimen tree removed (measured by the diameter of the tree at breast height, or ‘dbh’) would be proposed due to the difficulties associated with establishing oak trees in this area. Permanent impacts to 0.55 ha (1.37 ac) of oak woodlands and 29 specimen trees would be mitigated through replacement planting on-site.

Following construction, there would be considerable right-of-way acreage, particularly in the vicinity of the SR 70/149 interchange, that would be available for oak plantings. The majority of the oak impacts would be along SR 70 and within the SR 70/149 interchange, which is adjacent to existing oak woodlands and associated riparian habitat. Mitigation, therefore, should be performed near the area of impact. Mitigation credits for any additional oak woodland acreage that may be required would be purchased from an approved bank such as from the Chico State Research Foundation, which has available credits within Butte County.

CDFG has reviewed the oak/riparian habitat mitigation plan. This plan includes implementation schedule, site location, site preparation, planting and establishment techniques, maintenance, performance criteria, commitments for monitoring and remedial actions for performance criteria not met. In addition, the following items would be implemented:

- Oak trees to be avoided during construction would be identified on project plans as ESAs and marked in the field by staking or fencing the tree canopies.
- A tree count would be made at the end of project construction to verify the number of trees removed. This number would be used to finalize the oak mitigation plan.

Invasive Species/Noxious Weeds – In accordance with Executive Order 13112 addressing introduction of invasive species, the following measures would be proposed:

- Construction vehicles would be cleaned and inspected prior to entering the project area.
- All erosion control materials (including straw bales and mulch) would be certified weed-free.
- All disturbed areas would be stabilized and re-vegetated at the completion of construction. This would involve the placement of seed, slow release organic fertilizer, compost and mulch.
- Seed and container plants used in the project would be species found in the project area and would be genetic stock from the Sacramento Valley.

Fisheries

Impacts to resident fish would be avoided or minimized through ongoing consultation with the NMFS, CDFG, USACOE, USFWS, and Central Valley Regional Water

Quality Control Board, and through mitigation measures employed to protect special status fish, as outlined in Section 3.8.3, Salmonids and their Critical Habitat.

Wildlife

The following BMPs and/or mitigation measures would be incorporated into the project, as deemed necessary from coordination with CDFG, USFWS, and USACOE, to minimize/mitigate impacts to wildlife species that may be present in the project area:

- Restore streamside and riparian habitat disturbed by construction. Prior to vegetation removal, the area of impact would be surveyed by a qualified biologist for a complete assessment of all species present and their relative quantities. Riparian vegetation would be cut by hand (where applicable) to ground level in temporary use areas to allow for re-growth following construction. After construction, compensation for the lost and disturbed riparian vegetation would occur on-site and in-kind at a ratio to be determined by consultation with the CDFG to ensure “no net loss” of riparian habitat. Restoration areas would be planted with native plants of the same species that were affected or removed during construction. The banks of the disturbed channels would be restored and re-graded to maximize the growth of riparian vegetation. The upland areas would be restored and re-graded to slow the overland flow of rainwater and provide a variety of hydrologic conditions.

Restoration efforts would be monitored annually by a qualified biologist for five years after completion of construction. Success would be determined by survival percentages of replanted species. If performance standards as agreed to in the HMMP were not met, remedial measures such as replanting would be implemented.

- Minimize disturbance to creek channel and adjacent areas. Disruption of the streambed and bank, and adjacent riparian corridor would be minimized. All areas outside of and adjacent to the construction limits would be designated as Environmentally Sensitive Areas (ESAs) and would be fenced to prevent disturbance of these areas. Disturbed areas would be graded and temporary erosion control methods employed to prevent surface erosion and siltation of the waterways. BMPs would be utilized to prevent contamination of stream- side soil and adjacent waters from construction material and debris. Stream banks and

adjacent areas would be revegetated after construction to avoid increased erosion from subsequent storms and associated runoff.

- A drainage system has been designed to maintain the water level of the freshwater marsh and beaver dam area, and prevent ponding and flooding of the roadway right-of-way. This system would be constructed adjacent to the new roadway to minimize loss of habitat. Temporary impacts to the freshwater marsh would be minimized through the use of Cofferdams instead of complete de-watering.
- All bridge construction and renovation as well as culvert extensions would allow for the passage of small wildlife under the roadway. All culverts and box structures would be continuous from both sides of the roadway, reducing the potential for road kill. All in-stream cattle fences (attached to State highway structures, or within the State right-of-way) would be removed and not replaced. This would allow larger wildlife to cross under the roadway.
- Loss of foraging habitat due to direct or indirect impacts would be mitigated within oak woodland, riparian and/or wetland habitats at a ratio to ensure “no net loss” of habitat.
- Vegetation removal would be minimized. Vegetation removed would be replaced in-kind at ratios to be determined through consultation with CDFG and the USFWS.
- Work windows may be implemented to avoid or minimize impacts.
- If an occupied or unoccupied nest were removed, appropriate mitigation would be undertaken to replace lost habitat at a ratio to be determined by the CDFG and USFWS.

3.8 Special Status Species

Special status plant and animal species are those that are considered rare, threatened or endangered within the State or region by local, State or federal resource conservation agencies. These agencies include the USFWS, CDFG, NMFS and the California Native Plant Society (CNPS). Special status species are either protected or being considered for protection under the federal Endangered Species Act (ESA), California Endangered Species Act, California Native Plant Protection Act, or the California Fish and Game Code. Appendix H contains a USFWS list of endangered

and threatened species that may be present in or may be affected by the proposed project.

3.8.1 Affected Environment

The project area has high potential for the occurrence of special status species due to the diversity of plant communities, abundance of wetland habitat types, low degree of habitat alteration and minimal commercial/residential land uses. To identify species of concern, Caltrans consulted State and Federal sensitive species lists and the California Natural Diversity Database (*CNDDDB 2000*), and met with various resource agency representatives. Coordination with the USFWS is referenced in Appendix A. Field studies were done in 1992 and 1993 by Biosystems, and in 1997-1999 and 2001 by Caltrans (*Caltrans, 2000*).

An annotated list of special status species that may occur or are present in the project area is provided in Tables 3-4 & 3-5 below. Many of the species listed have not been observed in the project area, but potential habitat is present.

Table 3-4. Rare and Sensitive Animal Species

(Species in **bold type** are discussed in this document)

Common Name	Scientific Name	Status	Habitat	Potential For Occurrence	Observed/ Effected?
Birds					
Northern goshawk	<i>Accceptor gentilis</i>	FSC, CSC	Nests in the vicinity of coniferous forest. Usually nests on north slopes near water in conifers and aspens.	No suitable nest habitat	Not observed; No effect.
Tricolored Blackbird	<i>Agelaius tricolor</i>	FSC, CSC	Associated with emergent wetlands with dense cattails/tules but also thickets of willow, blackberry and wild rose	Suitable habitat	Not observed; Potential Impact
Golden Eagle	<i>Aquila crysaetos</i>	CSC, Fully Protected	Rolling foothill or coast-range terrain, where open grassland turns to scattered oaks, sycamores, foothill pine.	Potential foraging habitat.	Not observed; Potential Impact
Western Burrowing Owl	<i>Athene cunicularia hypugea</i>	FSC, CSC	Associated with open dry grassland and desert habitats. Nest in burrows in old ground squirrel.	Suitable habitat	Not observed; Potential impact
Aleutian Canada Goose	<i>Branta canadensis leucoprareia</i>	Delisted	Nests on ground (scrape nest) in freshwater and brackish marshes, meadows, small islands.	Marginal habitat	Not observed; No effect.
Ferruginous Hawk	<i>Buteo regalis</i>	FSC, CSC	Migratory wintering bird (non-nesting) in CA. Requires large open grasslands, shrub, or desert.	Suitable foraging habitat present	Not observed; Potential impact
Swainson's Hawk	<i>Buteo swainsoni</i>	CT	Open grasslands with scattered large trees for nesting.	Suitable nesting and foraging habitat	Observed foraging; Potential Impact
Little Willow Flycatcher	<i>Empidonax trailii brewsteri</i>	FSC, CE	Nests in willow or alder thickets in low valleys, swamps, canyons, high mountain meadows.	Marginal habitat	Migrant observed; No effect.
American Peregrine Falcon	<i>Falco peregrinus anatum</i>	Delisted, CE	Woodland, forest, and coastal habitats. Forage in open country. Nesting on protected ledges of high cliffs, buildings, bridges	No suitable nesting habitat.	Not observed; No effect.
Bald Eagle	<i>Halieetus leucocephalus</i>	FT, CE Fully Protected	Aquatic ecosystems: estuaries, rivers, reservoirs and large lakes. Nests near open water in area w/some old growth components	No suitable nesting habitat.	Not observed; No effect.
White-Faced Ibis	<i>Plegadis chihi</i>	FSC, CSC	Nests in extensive marshes. Forage in dense emergent vegetation in shallow water or muddy fields	No suitable nesting habitat.	Not observed; No effect.
California Spotted Owl	<i>Strict occidentalis occidentalis</i>	FSC, CSC	Multi-layered coniferous forests	No suitable habitat	No effect.

White-tailed Kite	<i>Elanus caeruleus</i>	CA fully protected	Low, rolling foothills/ valley margins with scattered oaks and river bottomlands or marshes adjacent to deciduous woodland.	Suitable habitat	Observed; Potential impact
Reptiles					
Northwestern Pond Turtle	<i>Clemmys marmorata marmorata</i>	FSC, CSC	Slow or still water with some vegetation, access to basking sites and upland oviposition sites.	Suitable habitat; limited basking sites	Observed in Cottonwood Creek; Potential impact
California Horned Lizard	<i>Phrynosoma coronatum frontale</i>	FSC, CSC	Exposed sandy gravelly substrate, clearings in riparian habitat, annual grasslands with scattered perennial seepweed.	Marginal habitat	Not observed; No effect.
Giant Garter Snake	<i>Thamnophis gigas</i>	FT, CT	Aquatic species. Freshwater marsh and low gradient streams and sloughs with mud bottoms, also temporary water such as drainage canals and irrigation ditches.	Limited suitable habitat; not within range of known distribution	Not observed; No effect.
Amphibians					
California tiger Salamander	<i>Ambystoma tigrinum californiense</i>	FSC, CSC	Grasslands and open foothill woodlands with vernal pools for breeding and available rodent burrows for aestivation	Marginal habitat	Not observed; No effect
California Red-Legged Frog	<i>Rana aurora draytoni</i>	FT, CSC	Coastal and foothill drainages. Slow and still deepwater (1m or greater) pools with emergent and floating veg.	Marginal habitat	Not observed; No effect.
Foothill Yellow-Legged Frog	<i>Rana boylei</i>	FSC, CSC	Coastal and foothill drainages. Shallow flowing water in small to moderate sized streams with at least some cobble-sized substrate.	Marginal habitat	Not observed; No effect.
Western Spadefoot Toad	<i>Scaphiopus hammondi</i>	FSC, CSC	Breed in temporary pools that last minimum of 3 weeks. In grassland, valley/foothill hardwood woodlands.	Suitable habitat	Not observed; Potential impact.
Fish					
Green Sturgeon	<i>Acipenser medirostris</i>	FSC, CSC	An anadromous species found in the lower reaches of large rivers, including the Sacramento River.	No suitable habitat.	No effect
Delta Smelt	<i>Hypomesus transpacificus</i>	FT, CT	Brackish waters of Sacramento-San Joaquin estuaries (San Pablo, Suisun, and San Francisco Bays, inland to San Joaquin and Sacramento Counties)	No suitable habitat.	No effect
Steelhead – Central Valley ESU	<i>Oncorhynchus mykiss</i>	FT	Sacramento-San Joaquin Rivers and their tributaries. Spawn in small streams where cool, well-oxygenated water is available year round.	Migratory and rearing habitat	Potential impact

Critical Habitat – Steelhead - Central Valley ESU	<i>Oncorhynchus mykiss</i>		Juvenile rearing areas, juvenile migration corridors, areas for growth and development to adulthood, adult migration corridors, and spawning areas within creeks and riparian corridor.	Project is within the geographic range of critical habitat	Potential impact
Chinook Salmon – Central Valley fall/late fall run	<i>Oncorhynchus tshawytscha</i>	FSC	Spawns only in the Sacramento River in cold water above the Red Bluff Diversion Dam	Potentially habitat	Potential impact
Chinook salmon – Central Valley Spring-run	<i>Oncorhynchus tshawytscha</i>	FT, CT	Spawns in deeper water and larger gravel sizes (cantaloupe) than other salmon. Most spawning and rearing activity take place in the main stream channels above the saltwater limit or hundreds of miles upstream.	Potential rearing habitat	Potential impact
Critical Habitat – Chinook salmon – Central Valley Spring-run	<i>Oncorhynchus tshawytscha</i>		Juvenile rearing areas, juvenile migration corridors, areas for growth and development to adulthood, adult migration corridors, and spawning areas within creeks and riparian corridor	Project is within the geographic range of critical habitat	Potential impact
Sacramento splittail	<i>Pogonichthys macrolepidotus</i>	FT, CSC	Lower reaches of all rivers tributary to the Delta. Slow moving section of rivers and sloughs dominated by emergent and floating vegetation.	Marginal habitat; not within range of known distribution	Not observed; No effect.
Invertebrates					
Antioch Dunes Anthicid Beetle	<i>Anthiscus antiochensis</i>	FSC	Loose, fine grained sand which is sparsely vegetated	No suitable habitat	No effect
Sacramento Anthicid Beetle	<i>Anthiscus sacramento</i>	FSC	Loose, fine-grained sand deposited by wind, water or man , which is sparsely vegetated	No suitable habitat	No effect
Conservancy Fairy Shrimp	<i>Branchinecta conservatio</i>	FE	Larger vernal pools, seasonal wetlands.	No suitable habitat	No effect
Vernal Pool Fairy Shrimp	<i>Branchinecta lynchi</i>	FT	Temporary pools in grass or mud-bottomed swales, basalt flow depressions in unplowed grasslands.	Suitable habitat	Observed; Potential impact
Sacramento Valley Tiger Beetle	<i>Cicindella hirticollis abrupta</i>	FSC	Known from the Feather River near the town of Nicholas, habitat is thought to be barren or sparsely vegetated sandy shorelines or beaches of rivers, on sandbars or sandy alluvial fans.	No suitable habitat	No effect
Valley Elderberry Longhorn Beetle	<i>Desmocerus californicus dimorphus</i>	FT	Riparian habitat in Central Valley to 3,000 ft elev. All life stages dependant on elderberry host plant	Host plant present	Potential impact

Vernal Pool Tadpole Shrimp	<i>Lepidurus packardii</i>	FE	Temporary pools of very low conductivity and alkalinity; grass-bottomed swales in old alluvial soils underlain by hardpan or in mud-bottomed pools containing highly turbid water.	Suitable habitat	Observed; Potential impact
Mammals					
Townsend's Big-eared Bat	<i>Corynorhinus townsendii</i>	FSC; CSC	Associated w/ mines and caves, and "cave like" structures. Old buildings may provide suitable roost sites. Low desert to middle elevation montane forests. Extremely sensitive to disturbance of roost site.	No suitable habitat	No effect.
Marysville Heerman's Kangaroo Rat	<i>Dipodomys californicus eximius</i>	FSC, CSC	Sierra and coastal foothills up to hardwood-conifer belt. Prefer dry grassy plains with moderate shrub cover. Well drained soils required for burrows	Marginal habitat (clay soils)	Not observed; No effect
Spotted Bat	<i>Euderma maculatum</i>	FSC; CSC	Rocky cliffs, caves, mines. Forage in open woodlands and forests	No suitable habitat	No effect
Greater Western Mastiff Bat	<i>Eumops perotis californicus</i>	FSC; CSC	Roosts in high cliff crevices, forages high over canopy	No suitable habitat	No effect
Pacific Fisher	<i>Martes pennanti pacifica</i>	FSC; CSC	Large-tree- stages of coniferous forests, deciduous riparian. Prefers high percent canopy closure.	No suitable habitat	No effect
Small Footed Myotis	<i>Myotis ciliolabrum</i>	FSC	Many habitats. Crevice and cavity roosts. Forage in open	Limited suitable habitat	Not observed; Potential impact
Long Eared Myotis	<i>Myotis evotis</i>	FSC	Forest associated. Roosts in caves, mines, trees, crevices, bridges. Forage in vegetation and near ground	Limited suitable habitat	Not observed; Potential impact
Fringed Myotis	<i>Myotis thysanodes</i>	FSC	Mixed forests. Roosts in buildings, mines. Also tree hollows, cliffs. Forage in vegetation	Limited suitable habitat	Not observed; Potential impact
Long Legged Myotis	<i>Myotis volans</i>	FSC, CSC	Many habitats. Roosts in hollow trees and snags. Also crevices, mines, caves.	Limited suitable habitat	Not observed; Potential impact
Yuma Myotis	<i>Myotis yumanensis</i>	FSC, CSC	Associated w/ low elevation reservoirs. Roosts in buildings and structures, trees, mines, caves, crevices. Open water for forage	Limited suitable habitat	Not observed; Potential impact
San Joaquin Pocket Mouse	<i>Perognathus inornatus</i>	FSC	Grasslands and blue oak savannas with fine-textured, friable soils, and on friable soils in alkali sinks and in Atriplex associations of the Tulare Basin.	Potentially suitable habitat	Not observed; No effect

FE: Federal Endangered; **FT:** Federal Threatened; **FPE:** Federal Proposed Endangered; **FPT:** Federal Proposed Threatened; **CE:** CA Endangered; **CT:** CA Threatened; **CSC:** CDFG Species of Special Concern; **FSC:** USFWS Species of Special Concern

Table 3-5. Rare and Sensitive Plant Species

(Species in **bold type** are discussed in this document)

Common Name	Scientific Name	Status	Habitat	Survey period	Elevation Range (m)	Comments
Depauperate Milk Vetch	Astragalus pauperculus	CNPS 4	Cismontane woodland, valley and foothill grassland; vernally mesic, volcanic sites	March-June	60 - 855	Observed in project area; potential impact
Ferris's Milk Vetch	<i>Astragalus tener</i> var. <i>ferrisae</i>	FSC, CNPS 1B	Vernally mesic meadows, Valley foothill grassland, Sub-alkaline flats	Apr.-May	5 - 75	Not observed.
Butte County morning-glory	<i>Calycadenia oppositifolia</i>	FSC, CNPS 1B	Cismontane woodland, valley and foothill grassland, Butte County	April-July	215 - 945	Not observed
Fox sedge	<i>Carex vulpinoidea</i>	CNPS 2	Freshwater marshes, swamps and riparian woodlands	May – June	30 - 1200	Not observed.
Hoover's Spurge	<i>Chamaescyche hooveri</i>	FT, CNPS 1B	Vernal pools	July	25 - 250	Not observed in project area; Observed in Pentz Pool adjacent to project area.
Mosquin's clarkia	<i>Clarkia mosquinii</i>	FSC, CNPS 1B	Cismontane Woodlands, usually on steep, rocky cutbanks and slopes	May-July	185 - 640	Not observed.
Four-angled spikerush	<i>Eleocharis quadrangulata</i>	CNPS 2	Freshwater marshes and swamps	May – Sept.	20 - 500	Not observed.
Butte Fritillary	<i>Fritillaria eastwoodiae</i>	FSC, CNPS 3	Dry benches and slopes of chaparral, cismontane woodlands and openings in lower coniferous forests	March-May	50 - 1500	Not observed.

Adobe Lilly	<i>Fritillaria pluriflora</i>	FSC, CNPS 1B	Adobe soils; valley/foothill grassland, chaparral, cismontane woodland; usually on clay soils	Feb.-Apr.	60 - 705	Not observed.
Rose-mallow	<i>Hibiscus lasiocarpus</i>	CNPS 2	Freshwater marshes and swamps	June – Sept.	0 - 120	Not observed
Ahart's Rush	<i>Juncus leiospermus</i> var. <i>ahartii</i>	FSC, CNPS 1B	Vernal pools	March-May	30 - 100	Not observed
Red Bluff dwarf rush	<i>Juncus leiospermus</i> var. <i>leiospermus</i>	CNPS 1B	Chaparral, valley and foothill grassland, cismontane woodlands.	April	35 - 1020	Not observed
Butte County Meadowfoam	<i>Limnanthes floccosa</i> ssp. <i>californica</i>	FE, CE, CNPS 1B	Vernal pools, mesic valley/foothill woodland	March-May	50 - 930	Observed; Potential impact
Wooly Meadowfoam	<i>Limnanthes floccosa</i> ssp. <i>floccosa</i>	CNPS 4	Margins of vernal pools, moist meadows in the Klamath and Cascade ranges, and Butte and Lake counties	March - June	<300	Not observed in project limits
Shield-bracted monkeyflower	<i>Mimulus glaucescens</i>	CNPS 4	Cismontane woodland, valley and foothill grassland	Feb-August	60 - 1220	Not observed
Veiny Monardella	<i>Monardella douglasii</i> ssp. <i>venosa</i>	FSC, CNPS 1B	Heavy clay soils of Valley and Foothill grasslands, oak woodlands and chaparral	May	60 - 410	Not observed.
Hairy Orcutt Grass	<i>Orcuttia pilosa</i>	FE, CE, CNPS 1B	Vernal pools	May-Aug.	55 - 200	Not observed; Recorded from Pentz Pool adjacent to project area.
California adder's-tongue fern	<i>Ophioglossum lusitanicum</i> spp. <i>Californicum</i>	CNPS 4	Vernal pools	Dec - May	60 - 300	Not observed
Ahart's paronychia	<i>Paronychia ahartii</i>	FSC, CNPS 1B	Valley and foothill grassland	March - June	30 - 510	Not observed
California beaked-rush	<i>Rhynchospora californica</i>	FSC, CNPS 1B	Freshwater seeps, open marshes	May – July	45 - 1010	Not observed.

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation

Valley Sagittaria	<i>Sagittaria sanfordii</i>	FSC, CNPS 1B	Shallow freshwater	May-Aug.	0 - 610	Not observed.
Tracy's Sanicle	<i>Sanicula tracyi</i>	FSC, CNPS 4	Openings in Cis-montane Woodland, Lower and Upper Coniferous Forests; dry gravelly slopes or flats.	Apr-July	100 - 1585	Not observed.
Butte County Checkerbloom	<i>Sidalcea robusta</i>	FSC, CNPS 1B	Cismontane woodland, chaparral	Apr.-June	90 - 1600	Not observed.
Butte County Golden Clover	<i>Trifolium jokerstii</i>	CNPS 1B	Moist swales and depressions in open grassland. Only found in Butte County.	March - May	200 – 1200	Not observed.
Greene's Tuctoria	<i>Tuctoria greenei</i>	FE, CR, CNPS 1B	Vernal Pools	May-July	30 - 1070	Not observed; Recorded from Pentz Pool adjacent to project area..

CE: CA Endangered; **CT:** CA Threatened; **CR:** CA Rare; **FE:** Federal Endangered; **FT:** Federal Threatened; **FPE:** Federal Proposed Endangered; **FPT:** Federal Proposed Threatened; **FC:** Federal Candidate for Listing; **FSC:** Federal Species of Concern; **CNPS List 1B:** California Native Plant Society list of plants rare, threatened or endangered in California; **CNPS List 2:** California Native Plant Society list of plants rare, threatened or endangered in California, but more common elsewhere; **CNPS List 3:** California Native Plant Society list of plants about which there is a need for more information; **CNPS List 4:** California Native Plant Society list of plants of limited distribution- a watch list plant

Birds

Cliff swallows (*Hirundo pyrrhonota*). Cliff swallows are currently nesting on the underside of the bridges at Clear Creek, Dry Creek, Little Dry Creek, Gold Run Creek (on SR 70 & 149) and Campbell Creek. They are protected by the Federal Migratory Bird Treaty Act from activities that could disturb nesting.

Tricolored blackbird (*Agelaius tricolor*; federal and State species of concern). Tricolored blackbirds occur infrequently throughout lowland California where colonies nest in wetland habitats with large stands of emergent vegetation. The closest nest site was reported in 1983, 10 miles north of the project area. No tricolor blackbirds have been observed in the project area although some suitable nesting habitat is present.

Swainson's Hawk (*Buteo swainsoni*; State threatened). Swainson's hawk is a summer migrant to the Central Valley that arrives on its nesting grounds in March. Nests are typically located in large trees associated with riparian areas adjacent to open grasslands or agricultural fields. There are several nest sites reported for Butte County that are all located to the west of the project area (CNDDDB 2001). The closest active nest was recorded in 1994 and is located 8.4 km (5.2 mi) west of the project area along Butte Creek. Three additional nest sites occurring within 10 miles of the project area were reported in 1994 and 1998. These occurrences include two additional nests recorded on Butte Creek in 1994 and one nest at the Chico State Farm, approximately 11.6 km (7.2 mi) from the project site.

Within the project area, there is potential nesting habitat in the riparian corridor along Dry Creek, upstream from SR 149, where eucalyptus and cottonwood trees are growing within the right-of-way at the SR 99/149 intersection. Annual grassland and agricultural cropland within the project area provides foraging habitat for this hawk. Swainson's hawks were not observed during 1997 spring and summer surveys, but were observed foraging along the Dry Creek corridor during reconnaissance surveys in 1999 and 2001.

Other Raptors:

A number of raptor species are known to or may potentially occur in the study area and may be impacted by the project. Riparian forest and woodland provide nesting habitat for species such as the Cooper's Hawk (*Accipiter cooperii*), and White-Tailed Kite (*Elanus caeruleus*). Annual grassland in the project area provides foraging habitat for raptors including Ferruginous Hawk (*Buteo regalis*), and Golden Eagle

(*Aquila chrysaetos*). Some species such as the White-Tailed Kite establish communal roost sites during the non-breeding season (Polite, 1990). Five White-Tailed Kites were observed roosting in a large tree adjacent to the freshwater marsh on SR 149 near SR 70, indicating a potential roost site.

Western Burrowing Owl (*Athene cunicularia hypugea*, federal and State species of special concern): This species is protected by the Federal Migratory Bird Treaty Act. It is associated with open dry grassland habitat, and builds nests in burrows in the ground. Potential habitat is present within the project area, though this species has not been observed during field surveys.

Reptiles

Northwestern Pond Turtles (*Clemmys marmorata*). Northwestern pond turtles are a federal species of concern and State species of special concern. Suitable habitat for this species can be found in marshes, rivers, streams, and irrigation ditches with emergent vegetation (Stebbins, 1985). Habitat quality appears to be associated with the availability of basking and upland oviposition sites within close proximity of water. Adult turtles may overwinter in upland sites, enabling them to occupy creeks or waterways that are dry for several months each year. Pond turtles were observed within the channel of Cottonwood Creek north and south of SR 149 and within the freshwater marsh associated with the beaver dams adjacent to SR 149.

Amphibians

Western Spadefoot Toad (*Scaphiopus hammondi*; federal and State species of concern). A near California endemic, this toad requires temporary rain pools, including vernal pools, lacking predatory species such as introduced fishes, bullfrogs, and crayfish. The toads require pools lasting at least 3 weeks or more for successful reproduction. The project area may provide suitable habitat for this species, although it was not observed during field surveys.

Fish

The following special status fish species could potentially be impacted by the proposed project:

- Central Valley spring-run Chinook salmon Evolutionarily Significant Unit (ESU) (*Oncorhynchus tshawtscha*, federal and State threatened)
- Central Valley Steelhead ESU (*Oncorhynchus mykiss*, federal threatened)

There are five creeks within the project area: Little Dry Creek on SR 99, and Clear, Dry, Gold Run, and Cottonwood Creeks along SR 149. All five creeks are tributaries to Butte Creek, which supports the above listed salmonid species. However, sensitive salmonid species are not expected to spawn or rear in the drainages within the project area as they lack suitable upstream spawning habitat, are subject to increased water temperatures that do not support reproducing anadromous fisheries, and only contain salmonid species during high flow incidents (Ward, CDFG pers. Comm. 2001).

Drainages within the project area are within the geographic range of designated Critical Habitat and may contain the criteria for Essential Fish Habitat for the associated salmonid species. Critical Habitat and Essential Fish Habitat for the following species may potentially be affected by the proposed project:

- Central Valley spring-run Chinook salmon Critical Habitat
- Central Valley Steelhead Critical Habitat
- Central Valley fall-run and late fall-run Chinook salmon Essential Fish Habitat

Spring-run Chinook and steelhead designated Critical Habitat includes all features that contribute to riparian function. Fall-run Chinook Essential Fish Habitat is defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (65 FR 32:7764-7787).

Invertebrates

Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*, “VELB,” federal threatened). VELB are found in association with their host plant, the elderberry shrub (*Sambucus mexicana*), upon which all stages of the VELB life cycle depend. The elderberry shrub is not designated critical habitat. Elderberry shrubs are found in riparian forests and adjacent upland habitats throughout the Central Valley watershed to the west, and surrounding foothills to the east up to 3,000 feet in elevation.

The project site was surveyed in April 1993 by BioSystems, who documented 47 elderberry shrubs in five discrete areas. One shrub growing along a ditch near the southeast end of SR 149 had a single VELB exit hole (evidence of the beetle’s presence).

Caltrans’ most recent survey for shrubs and beetle exit holes in the project area occurred in spring 2001. Thirty-nine (39) shrubs were found, with one showing evidence of VELB use (i.e. exit holes). However, several shrubs were not accessible

to examine for exit holes. Most of these shrubs are located in the riparian corridors within the proposed SR 70/149 interchange area, and along Dry Creek. Adult VELB were not observed during either the BioSystems or Caltrans surveys.

Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp (*Branchinecta lynchi*, federal threatened; *Lepidurus packardii*, federal endangered). Potential habitat was identified using survey locations determined by BioSystems in 1993, and updated and revised in 1999 and 2001 by Caltrans (Figure 2-4 through Figure 2-6). Protocol surveys were not conducted for the entire project area; therefore, Caltrans is assuming the presence of sensitive fairy and tadpole shrimp species in all potential habitats. Potential habitat includes ponded areas in vernal pools and swales, other wetlands, and roadway drainages (wetland and non-wetland).

Bats

Several special status species of bats (Table 3-4) may potentially occur within the project area. Their presence is dependent on the availability of suitable habitat. These bats may use bridges, buildings, trees, and/or natural structures (trees, caves, rock cavities) for day and/or night roosts. One or more of these structures could also be used as a maternal roost. Several stream and wetland habitats, including freshwater marshes within the project area, provide suitable foraging habitat for bats.

Plants

Butte County Meadowfoam (BCM) (*Limnanthes floccosa* ssp. *californica*, federal and State endangered). This plant is found within vernal pool and swale habitat, and in drainage ditches in the vicinity of Gold Run Creek. Twelve sub-populations have been recorded within the project area, and the locations are shown in Figure 2-4 through Figure 2-6.

Depauperate Milk Vetch (*Astragalus pauperculus*) is a California Native Plant Society (CNPS) List 4 plant of limited distribution, considered a “watch list” species. Depauperate Milk Vetch has no other State or federal designation. There are five populations consisting of thousands of individuals in the study area.

3.8.2 Impacts

Species addressed in this section are those that were identified during project surveys, have high probability of occurring in the project area or required focused/protocol surveys. Survey methods and additional species information can be found in the Natural Environment Study.

Cliff swallows: Impacts could occur from construction/repair of bridge structures if work is conducted during the nesting period. Impacts would be similar for all alternatives.

Tricolored blackbird: Impacts could occur from removal of vegetation that may provide potential nesting habitat.

Swainson's Hawk: Within the project area, suitable foraging habitat for Swainson's hawk includes agricultural fields, annual grassland, and ruderal areas along the roadside. There is one record of an active Swainson's hawk nest site within 16 km (10 mi) of the project site (*CNDDB 2001*). Figure 3-3 shows potential foraging habitat impacts, which would be similar for the three build alternatives. Conservation guidelines suggest that any loss of foraging habitat within 16 km (10 mi) radius of an active nest tree (i.e. used during one or more of the last 5 years) would require mitigation (*CDFG 1994*). Prior to construction, surveys would be conducted to confirm the presence/absence of active Swainson's nests in the project area.

Other Raptors: The project may directly eliminate potential foraging, nesting, and/or roosting habitat for the raptors including white-tailed kite, golden eagle and ferruginous hawk. Potential impacts are similar for all alternatives.

Western Burrowing Owl: Impacts to this species could occur throughout the project area from the following actions:

- Disturbance within 50 m (160 ft) of occupied burrows which may result in harassment of owls,
- Destruction of natural and artificial burrows (culverts, concrete slabs, and debris piles that provide shelter),
- Destruction and/or degradation of foraging habitat adjacent (within 100 m) of an occupied burrow.

Potential impacts would be similar for all build alternatives.

Northwestern Pond Turtle: Construction of the SR 70/149 interchange, connector ramps, and highway widening may affect pond turtles due to disturbance of the marsh habitat utilized by the turtles. All build alternatives would result in a permanent loss of occupied habitat. The estimated impact to freshwater marsh habitat associated with Cottonwood Creek is 1.07 ha (2.64 ac) for Alternative 1, 2.00 ha (4.95 ac) for Alternative 2, and 1.87 ha (4.61 ac) for Alternative 3.

Western Spadefoot Toad: While this species has not been observed within the project limits, suitable habitat is present. Impacts could occur from construction activities in vernal pools and swales (see discussion of Vernal Pool Fairy and Tadpole Shrimp impacts on the following page).

Salmonids and their Critical Habitat: Due to the timing of the various runs of Chinook and steelhead, there is potential for juvenile non-natal rearing to occur upstream and downstream of the project areas in the adjacent tributaries at various times throughout the year.

Roadway widening, bridge construction and/or rehabilitation, and other activities adjacent to creeks in the project area could potentially impact listed salmonids and their critical habitats. Impacts to these species as well as to the resident fish population could include:

- Take or harassment
- Temporary destruction of riparian habitat
- Streambed modification
- Temporary increase in siltation and erosion
- Temporary loss of non-natal rearing habitat
- Introduction of non-native vegetation
- Aquatic habitat degradation
- Temporary reduction of downstream flow

The width or depth of the various streams and creeks would not be altered by construction of the proposed project. Construction related activities would not result in a loss of spawning habitat and/or spawning gravels. Fish passage would be maintained during all stages of project construction. The following table presents impacts to salmonid habitat:

Table 3-6. Salmonid Habitat Impacts

Alternative	Impact ha (ac)
1. Widen South	1.06 (2.62)
2. Widen North	0.86 (2.13)
3. Avoid BCM	0.89 (2.20)

Source: Revised NES, Caltrans 2002

Impacts would be minimized or avoided through BMPs, mitigation, and consultation with the USFWS, NMFS and CDFG. Work windows and design technologies would be implemented to minimize or avoid impacts.

Valley Elderberry Longhorn Beetle: Direct impacts to VELB could occur from the removal of elderberry shrubs within the construction limits due to excavation, fill and grading activities. Adjacent elderberry shrubs within 6 m (20 ft) of construction may also be indirectly affected. Indirect affects to VELB may occur due to the physical presence of work activities, increases in dust, or alterations in topography and drainage, which affect the survival of the elderberry shrubs. An initial estimate of direct and indirect impacts to VELB (using spring 2001 survey data) for each alternative are presented in the following table:

Table 3-7. VELB Impacts

	Direct Impact	Indirect Impact
Alternative	Number Elderberry Shrubs	Number Elderberry Shrubs
1- Widen South	22	3
2- Widen North	17	13
3- Avoid BCM	22	0

Source: Revised NES, Caltrans, 2002

Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp: Vernal pool shrimp species habitat includes ponded areas in vernal pools and swales, other wetlands, and roadway drainages (wetland and non-wetland). The following table shows the estimated impacts for each of the build alternatives:

Table 3-8. Vernal Pool Fairy Shrimp/Tadpole Shrimp Habitat Impacts

Alternative	Direct Impact ha (ac)	Indirect Impact ha (ac)	Total Impact ha (ac)
1. Widen South	13.6 (33.6)	5.7 (14.0)	19.2 (47.5)
2. Widen North	12.1 (30.0)	6.8 (16.8)	18.9 (46.8)
3. Avoid BCM	11.9 (29.3)	6.9 (17.0)	18.8 (46.3)

Source: Revised NES, Caltrans 2002

Direct impacts to habitat would occur from cutting slopes, placing fill and grading activities. These impacts would be considered permanent, causing changes in the configuration of habitat. Modifications of habitat would likely affect inundation and ponding duration, potentially resulting in the take of Fairy and Tadpole shrimp. These effects would be concentrated where the alteration occurs, at the time of

construction. Estimates of direct impact to fairy and tadpole shrimp habitat was determined for the entire area of pools that would be completely or partially disturbed by construction activities.

Indirect impacts are caused by construction activities, but occur later in time. These impacts may include alteration of pool and swale hydrology, erosion, human intrusion, increased sediment, and introduction of pesticides, predators and weedy non-native vegetation. Highways 149 and 99 are existing facilities that have transversed the project area for many years. A large area of vernal pool/swale complexes was excavated during the construction of SR 149 with little effect on the adjacent pools and swales. Currently, there are functioning vernal pools/swales located directly at the old cut line. Although there may be little effect from the proposed project except to those pools/swales directly impacted, indirect impacts were determined for all potential fairy and tadpole shrimp habitat within 76.5 m (250 ft) of the construction limits as suggested by the USFWS.

Bats:

Pre-construction surveys would be necessary to assess the presence of bats. Impacts could occur from disturbance of roosting sites such as bridges, buildings, trees, or rock cavities. Impacts could also occur due to disturbance of foraging habitat (streams, marshes). Should bats occur within the proposed project area, impacts would be avoided or minimized through use of work windows for construction and vegetation clearing. Bats can be excluded from structures and other suitable roost sites to avoid impacts. Suitable replacement roost sites can be incorporated in the design of new and replacement bridge structures to mitigate for loss of roost sites.

Butte County Meadowfoam (BCM): This special status plant could be directly impacted by cut, fill and grading work in vernal pools, which can alter the dimensions of pools and change inundation and duration characteristics.

Direct impacts were determined for entire pools containing BCM if the pool would be completely or partially disturbed by construction activities. Pools with BCM that are outside the construction limits may be indirectly impacted by construction through alterations in flow patterns, inundation and duration. As suggested by the USFWS, indirect impacts to BCM were determined for the area within 76.5 m (250 ft) of the construction limits. A summary of impacts to BCM is provided in the following table:

Table 3-9. Impacts to BCM

Alternative	Direct Impact Ha (ac)	Indirect Impact Ha (ac)	Total Ha (ac)
1. Widen South	0.16 (0.40)	0.02 (0.04)	0.18 (0.44)
2. Widen North	0.01 (0.03)	0.22 (0.54)	0.23 (0.57)
3. Avoid BCM	0	0.21 (0.53)	0.21 (0.53)

Source: Revised NES, Caltrans 2002

Alternatives 1 and 2 have the potential to directly impact and eliminate sub-populations of BCM, but would not threaten the continued existence of the remaining sub-populations. This would, however, reduce the overall population and result in a cumulative impact to the species. Alternative 1 would have the greatest direct impact to BCM. However, all impacts would be on the south side of SR 149, where the pools tend to have smaller population sizes and reduced reproduction potential. These sub-populations are also away from the core population of BCM on the north side of Openshaw Road.

Alternative 3 would avoid all direct impacts to BCM. It was developed at the request of resource agencies due to the importance of the species and the significance of the SR 149 population. BCM pools upstream of the construction limits for this alternative would not be affected by work lower in the watershed. Pools on the downstream side of the road would be outside the proposed disturbance area, and most pools would be far enough away from cut and fill that natural topography and hydrology would not be modified. Construction of this alternative would not alter the current flow patterns or ponding characteristics within individual pools.

Depauperate Milk Vetch: Direct impacts could result from cut and fill activities. All alternatives would impact two to three of the five populations. All alternatives would impact populations at the SR 99/149 interchange. Alternatives 1 and 3 would impact populations at the northern Schlaf access road and Alternative 1 would also impact a population at the Shippee Rd/ SR 149 intersection.

3.8.3 Mitigation

Cliff Swallows: In accordance with the Federal Migratory Bird Treaty Act and CDFG recommendations, a special provision in the construction contract would require either:

1. construction activities be scheduled to avoid the nesting period (March 15-July 31 or until young fledge), and/or
2. prevention of nest building on the bridge structures adjacent to proposed work prior to nesting season, according to protocol established by CDFG.

Tricolored Blackbird To avoid impacts to nesting birds, pre-construction surveys would be conducted to detect potential nesting sites. Sites would be monitored, and if any site became active prior to construction, a survey to study the impacts of the disturbance would need to be done. This would consist of observations as to whether or not the disturbance would cause the bird(s) to abandon the nest. If the disturbance would not cause abandonment, then construction could proceed. If construction would cause the bird to abandon the nest (while incubating or caring for fledglings), then construction in the vicinity would cease until all juvenile birds leave the nest.

If an unoccupied nest site is found, removal of the nest and surrounding habitat must occur outside of the species' breeding season, April 1 – September 1, and/or per guidelines established through coordination with the CDFG. Mitigation for removed nests would also be determined in consultation with CDFG.

Swainson's Hawk: The proposed project has the potential to impact 63.0 ha (155.7 ac) of Swainson's hawk nesting and foraging habitat. Under CDFG guidelines, losses of suitable foraging habitat within 10 mi of a nest site must be mitigated by protection or creation of equally suitable foraging habitat. If required, mitigation would be covered by the upland component of preservation of vernal pool fairy and tadpole shrimp habitat. This mitigation must be within a 10-mi radius of the impacted habitat. Minimization/mitigation measures would be coordinated with CDFG and incorporated into the final project design to reduce impacts. These measures would include, but are not limited to the following:

- Surveys would be conducted prior to the construction and/or the nesting season (whichever comes first) to detect any potential nesting sites. Identified sites would be monitored, and if any site became active prior to construction, a survey for potential impacts would be carried out. If construction would cause the bird to abandon the nest (while incubating or caring for fledglings), then construction would cease until all juvenile birds leave the nest.
- If an unoccupied nest site is found within the project area, removal of the nest tree (if required) must occur outside of the species breeding season (March 15 –

September 15), and/or per guidelines established through consultation with CDFG, and in accordance with the federal Migratory Bird Treaty Act.

Other Raptors in the orders of Falconiformes and Strigiformes: Mitigation measures established for the Swainson's hawk would also provide protection from direct and/or indirect impacts to other birds-of-prey including white-tailed kite and golden eagle. These mitigation measures would avoid or minimize impacts to these protected species.

Western Burrowing Owl: To avoid or minimize impacts, the following mitigation measures would be implemented:

- Pre-construction surveys would be conducted to detect any owls and/or potential nesting sites. Identified sites would be monitored, and if any site became active prior to construction, a survey for potential impacts would be carried out. If construction would cause the bird to abandon the nest (while incubating or caring for fledglings), then construction would cease until all juvenile birds leave the nest.
- If an unoccupied nest site is found within the project area, removal of the nest and surrounding habitat (soil), if required, must occur outside of the species' breeding season (February 1 – August 30), and/or per guidelines established through consultation with CDFG. (CDFG is the contact for this Species of Concern with oversight from USFWS).
- If an occupied or unoccupied nest were removed, appropriate mitigation would be undertaken to replace habitat at a ratio determined in consultation with CDFG and the USFWS.

Northwestern Pond Turtles: Impacts to pond turtles and their habitat would be avoided and minimized to the greatest extent practicable. Impacts from loss of 1.87 ha (4.61 ac) of freshwater marsh and other habitat occupied by the turtles would be compensated for as discussed under freshwater marsh mitigation (Section 3.6.3).

Prior to the start of any construction, the area would be surveyed for presence of pond turtles. If any were found, work would not begin until the turtle(s) is relocated to a suitable area outside the project limits. Measures to avoid and minimize impacts to northwestern pond turtles include:

1. A drainage system has been designed to maintain the water level of the freshwater marsh and beaver dam area, and prevent ponding and flooding of the roadway right-of-way. This system which includes a retaining wall and drainage system would be constructed adjacent to the new roadway minimizing the loss of pond turtle habitat. The cost of this drainage improvement is estimated to be \$1.5 million.
2. Grading and construction activities along Cottonwood Creek and associated freshwater marsh would be minimized between October 15 and May 1 to reduce impacts to hibernating turtles.
3. A minimum of two days prior to starting any construction work in ponded areas, water would be pumped or diverted from the work areas in a sequential manner allowing for the movement of turtles out from the work area.
4. Screens would be placed on intake pumps or as directed by the Resident Engineer to prevent harming pond turtles.
5. Caltrans biologists would be notified 10 days prior to the start of water diversion work and would be on site during this work. Pond turtles left in the work area would be relocated into adjacent downstream ponds.
6. The construction area (including water diversion/pumping activities) would be temporarily fenced to prevent pond turtles from moving back into the work area. Temporary fencing would be a small mesh fence, such as silt fence.

Western Spadefoot Toad: Impacts would be avoided or minimized by using construction windows limiting activities to the dry season. The compensation measures proposed for vernal pool fairy shrimp impacts would also mitigate for impacts to this species.

Salmonids and their Critical Habitat: The following protective measures would be utilized to avoid or minimize impacts to 0.89 ha (2.20 ac) of Chinook salmon habitat:

1. Restrict timing of in-stream activities. All in-water work would be conducted between June 1 and October 15, during the period when non-natal juvenile salmonids are unlikely to be present in the project area.
2. During construction, any stream flow would be diverted into culverts that would span the entire construction boundary. Culverts and roadway improvement would

be designed and constructed to allow fish passage at all sites within the project area.

3. Restore streamside and riparian habitat disturbed by construction. Prior to vegetation removal, the area of impact would be surveyed by a qualified biologist for a complete assessment of all species present and their relative quantities. Riparian vegetation would be cut by hand (where applicable) to ground level in temporary use areas to allow for re-growth following construction. After construction, compensation for the lost and disturbed riparian vegetation would occur on-site and in-kind at a ratio to be determined by consultation with the CDFG and other appropriate agencies to ensure “no net loss” of riparian habitat. Restoration areas would be planted with native plants of the same species that were affected or removed during construction. The banks of the disturbed channels would be restored and re-graded to maximize the growth of riparian vegetation. The upland areas would be restored and re-graded to slow the overland flow of rainwater and provide a variety of hydrologic conditions.
4. Riparian vegetation restoration efforts would be monitored annually by a qualified biologist for 5 years after construction is complete. Success would be achieved if there were a minimum of 50% vegetation survival by the third year and a stable viable population for the remainder of the monitoring period. If the performance standards were not met, remedial measures, such as replanting, would be implemented.
5. Minimize disturbance to creek channel and adjacent areas. Disruption of the streambed and bank, and adjacent riparian corridor would be minimized. All areas outside of and adjacent to the construction limits would be designated as Environmentally Sensitive Areas (ESAs) and would be fenced to prevent disturbance of these areas. Disturbed areas would be graded and temporary erosion control methods employed to prevent surface erosion and siltation of the waterways. BMPs would be utilized to prevent contamination of stream- side soil and adjacent waters from construction material and debris. Stream banks and adjacent areas would be permanently stabilized after construction to avoid increased erosion during subsequent storms and associated runoff. BMPs would include temporary erosion control, temporary and permanent soil stabilization, wind erosion and dust control, and stream sediment control.

Valley Elderberry Longhorn Beetle: Mitigation for impacts to 22 elderberry shrubs (119 stems) would follow Federal guidelines for avoidance and establishment,

restoration and maintenance of buffer zones. It would cover transplanting shrubs and replacement planting and monitoring. Caltrans would re-survey the shrubs in the study area following established survey guidelines. Mitigation requirements would then be determined based on shrub location, stem size and presence of exit holes.

Reasonable and prudent measures as recommended in the USFWS Conservation Guidelines for Valley Elderberry Longhorn Beetle would be utilized to avoid and minimize impacts on VELB and their habitat. These measures include:

1. Minimized construction footprint to minimize loss of elderberry shrubs.
2. Designate all areas outside the construction limits as environmentally sensitive areas (ESA). ESA information would be on contract plans and presented in the Special Provisions. Temporary fencing to mark the boundaries of the ESAs would be placed as the first order of work and prior to any vegetation removal (including transplanting of elderberry shrubs). There would be no disturbance or encroachment upon the ESA.
3. Educate Construction employees on the identification and location of elderberry shrubs and the VELB.
4. Incorporate standard BMPs for dust control and to ensure that topography and drainage patterns near shrubs are not altered
5. Ensure success of compensation plantings of elderberry shrubs and associated native plants.

Impacts to VELB would be mitigated according to the compensation recommendations in the USFWS Guidelines. Based on previous survey data, an estimate of mitigation credits needed is presented in the following table:

Table 3-10. VELB Mitigation

	Direct Impact		Credits
Alternative	Number of Shrubs	Number of Stems	5 stems per credit
3- Avoid BCM	22	119	24

Mitigation would include payment for 24 credits to the USFWS “VELB” fund, replacement planting and transplanting shrubs. Caltrans and FHWA are investigating all mitigation options available, including several large parcels in the general vicinity of the project, for replacement planting and transplanting.

Vernal Pool Fairy Shrimp and Tadpole Shrimp Habitat: Mitigation for loss of vernal pool Fairy Shrimp and Tadpole Shrimp habitat due to either direct and/or indirect impacts would consist of both preservation and creation components. Mitigation would ensure “no net loss” of habitat for all concerned vernal pool species. The following mitigation has been determined through consultation with the USFWS:

Preservation (2:1 ratio): Preserve 37.5 ha (92.7 ac) of habitat by purchase of credits at a USFWS-approved mitigation bank, or purchase a conservation easement at a 3:1 ratio [56.2 ha (138.9 ac)] on USFWS-approved conservation land;

Creation (1:1 ratio): Create 11.87 ha (29.33 ac) of habitat through payment for creation at USACOE-approved mitigation site.

The HMMP, reviewed and approved by USFWS, USACOE and USEPA, identifies the mitigation area(s), the method for preservation, and the long term maintenance and conservator. For the created habitat, the plan provides the implementation schedule, site preparation, planting plan, establishment techniques, maintenance plans, performance criteria, commitments for monitoring, and remedial actions if performance criteria are not met.

Engineering and Construction related measures to reduce impacts would include:

1. Final design would strive to avoid or minimize impacts to resources in the right-of-way. This would include increasing slope angles and/or reducing fill.
2. Restricting work in the areas of vernal pools and swales to the roadway side of cut and fill. This would avoid temporary construction impacts outside the edge of cut or toe of fill.
3. Restricting work in vernal pools and swales to the period when the pools are dry.
4. Maintaining the existing topography and drainage pattern outside the limits of cut and fill.
5. Maintaining existing hydrologic connections and flow patterns between the north and south sides of the road.

6. Designating the limits of cut and fill slopes as Environmentally Sensitive Areas (ESAs) to be avoided by work. The limits of the work area/ESA would be fenced with orange mesh fencing as a visual and physical barrier to protect the resources during the construction period.

Bats

Should bats be found within the project area, impacts would be avoided or minimized by any or all of the following:

- Construction work windows would allow work within specified areas when bats would not be present
- Pre-construction vegetation removal would restrict or eliminate potential roosting habitat
- Bats would be excluded from occupying structures that would be upgraded, and from other suitable roost sites.

Loss of bat foraging habitat would be mitigated within oak woodland, riparian and/or wetland mitigation areas at a ratio to ensure “no net loss” of habitat.

If necessary, suitable replacement roost sites could be incorporated in the design of new and replacement bridge structures.

Butte County Meadowfoam:

Alternative 3 would not result in direct impacts to BCM. Mitigation for indirect effects to 0.21 ha (0.53 ac) of habitat would be mitigated at a 5:1 ratio for a total of 1.1 ha (2.7 ac). This mitigation would be in the form of a contribution toward a multi-agency purchase of property containing an established population of BCM. The USFWS, USEPA and CDFG have approved this mitigation.

Depauperate Milk Vetch: Since these plants are believed to be “too widespread or not threatened at this time” (CNPS List 4) and since they have no state or federal protected status, there is no requirement for mitigation. However, Caltrans would take all reasonable actions to prevent impacts to these species:

1. Roadwork would be avoided or minimized in the areas containing these species.
2. In the spring prior to the scheduled start of work, limits of populations would be delineated with stakes.
3. Populations outside the delineated work area would be designated as ESAs on contract plans, and staked and flagged in the field.

The following table presents a summary of proposed mitigation for impacts to special status species:

Table 3-11. Summary of Mitigation for Special Status Species

Resource Impacted	Type of Mitigation
Cliff Swallows	Construction Measures, work windows
Tricolored Blackbird	Construction Measures, work windows
Swainson's Hawk & Other Raptors	Construction measures, work windows, protection or creation of habitat
Western Burrowing Owl	Construction measures, work windows, replacement of habitat
Pond Turtles	Construction measures, work windows, replacement of habitat,
Western Spadefoot Toad	Covered under vernal pool species mitigation
Steelhead/Salmon	Construction Measures, work windows, restore habitat
VELB	Construction measures, contribution to USFWS VELB fund, transplant & replacement plantings
Vernal Pool listed shrimp species	Construction measures; preservation and creation of habitat
Bats	construction measures, work windows
BCM (indirect impacts)	Construction measures, preserve existing population
Depauperate Milk Vetch	Avoidance and construction measures

3.9 Floodplain

Executive Order 11988 for Floodplain Management directs federal agencies to refrain from conducting, supporting, or allowing an action in a floodplain unless it is the only practicable alternative. The FHWA requirements for compliance are outlined in 23 CFR 650 Subpart A. An encroachment into a floodplain is defined as “an action within the limits of the 100-year floodplain,” with the 100-year floodplain being defined as “the area subject to flooding by the flood or tide having a one percent chance of being exceeded in any given year.” The National Flood Insurance Program (NFIP) produces maps that identify 100-year flood areas based on local hydrology, topology, precipitation, flood protection measures and other scientific data. This program is administered by the Federal Emergency Management Agency (FEMA).

3.9.1 Affected Environment

Within the proposed project limits, FEMA-mapped 100-year floodplains are present where SR 149 crosses Dry and Clear Creeks (Figure 3-4A, Zone A), and where SR 99 crosses Little Dry Creek (Figure 3-4B, Zone A). This information is depicted on Flood Insurance Rate Maps (FIRM) for Butte County (Panel Numbers 06007C0540C, and 06007C0760C).

3.9.2 Impacts

New bridges would be constructed at Dry Creek and Clear Creek on SR 149 to accommodate two new lanes of traffic, at Little Dry Creek on the west side of SR 99 as a component of a new driveway access road, and at Gold Run Creek on SR 70 north of SR 149. According to a Caltrans Floodplain Hydraulic Study dated 2/9/99, this construction would constitute a transverse encroachment into the 100-year floodplain at the Dry Creek, Clear Creek and Little Dry Creek locations. Impacts would be similar for all build alternatives. Temporary encroachments would consist of falsework to accommodate bridge construction, and permanent encroachments would occur where new piers are placed for the new Dry and Clear Creek bridges. In compliance with 23 CFR 650.111, the following information is offered regarding these encroachments:

- The proposed action would not constitute a significant encroachment as defined in 23 CFR 650.105.
- The proposed action would not support incompatible floodplain development.
- Impacts on natural and beneficial floodplain values would consist of temporary loss of riparian vegetation due to excavation for piers and abutments.
- Restoration and preservation of the natural and beneficial floodplain values would be included in replanting efforts to mitigate loss of riparian vegetation due to construction activities.
- Measures to minimize floodplain impacts would consist of designing the new piers for minimum head loss and placing them in line with the piers of the existing bridges. This would minimize the effect on the base flood water surface elevation at each encroachment location.

Figure 3-4. Floodplain Areas

3.9.3 Mitigation

None required.

3.10 Land Use

3.10.1 Affected Environment

Butte County is located in the northeast part of the Sacramento Valley, and is divided into two topographical sections: a valley area to the west and a foothill/mountain area to the east. The proposed project is located in a rural area on the eastern edge of the valley between the cities of Oroville and Chico, and land within this area is primarily used for grazing and irrigated crops (Figure 3-5). There are scattered rural residences throughout the area, with larger residential areas occurring to the south within the Oroville City limits, along SR 162, and Nelson Avenue. Large agricultural areas occur along SR 99 between Dry Creek and SR 162 and along SR 70 north of the SR 70/149 intersection.

The proposed project is subject to the land use designations in the Butte County General Plan. The Circulation Element of this plan states that new road construction in agricultural areas will occur only to support the area's agricultural economy, or to improve capacity of highways that serve a countywide and regional interest. Improvements in the SR 70/149/99 corridor have been in the Butte County RTP (Regional Transportation Plan) since 1990 and the RTIP (Regional Transportation Improvement Program) since 1992. These documents recommend the SR 70 corridor as the freeway link from Sacramento to Chico, and the proposed project is within this corridor. The highway improvements would connect Butte County to the national interstate system.

Land use designation within the project area is grazing/open land with a 40 ac minimum parcel size (along SR 149), and orchard/field crop with a 5 ac minimum parcel size (along SRs 70 and 99). There are also two areas designated as agricultural residential (1-40 ac per unit), one being along Shippee Road between SR 149 and 99 and the other on the north side of SR 149, between Gold Run Creek and the SR 70/149 intersection.

Figure 3-5. Land Use

3.10.2 Impacts

The proposed project would require the acquisition of approximately 118 ha (292 ac) of land adjacent to SRs 70, 149 and 99. This would consist of strips of land adjacent to the existing alignment, and areas needed for construction of interchanges and driveway access roads. This acquisition would change land use from the current open space, residential and farmland to highway use. (A discussion of farmland impacts is provided in Section 3.11.2).

The proposed project is consistent with the Circulation Element of the Butte County General Plan, which recommends improvements to SR 149 to address traffic demand and safety. The project is also consistent with BCAG's Regional Transportation Plan, which lists the SR 149 Highway Improvement project as a high priority. The proposed project is intended to meet the traffic needs in the area based upon the local land use plans.

3.10.3 Mitigation

None required.

3.11 Farmland

3.11.1 Affected Environment

Agricultural lands (row crops, rice fields and orchards) are present throughout the proposed project area. Olive orchards occur on both sides of SR 70 just north of the junction with SR 149. Fruit orchards are found along the south side of SR 149 on both sides of Shippee Road, and along SR 99 between Dry Creek and Cottonwood Road. Row crops occur on the south side of SR 149 west of Dry Creek and along the west side of SR 99 between Durham/Pentz Road and SR 149. Rice fields are found along the west side of SR 99 north of SR 149. Grazing land is present on both sides of SR 149, on the west side of SR 70 north of the SR 149 intersection, and intermittently throughout the remainder of the project area.

Butte County actively participates in the California Land Conservation (Williamson) Act program of 1965 (Gov't Code Section 51291). This program encourages landowners to work with local governments in order to protect important agricultural land and open-space. Landowners can enroll parcels for a minimum of 20 years; land

is assessed for property taxes at a rate consistent with the actual use rather than the potential value of the land. Williamson Act lands are classified as prime or non-prime based on evaluation by the Natural Resources Conservation Service (NRCS). Non-prime land is usually grazing and rangeland. Within the project area, 24 parcels of land [90 ha (223 ac)] are currently under Williamson contracts (Figure 3-6).

3.11.2 Impacts

The project would require the acquisition of approximately 118 ha (292 ac) of land. In accordance with the Farmland Protection Policy Act (FPPA) of 1984, Caltrans initiated coordination with the NRCS and submitted the site assessment criteria of the Farmland Conversion Impact Rating Form (Figure 3-7). This form provides a number rating based on land evaluation and site assessment criteria. The NRCS determined that a total of approximately 1.2 ha (3 ac) of land proposed for acquisition in two locations along SR 149 (one near Shippee Rd. and the other approximately 0.5 mi east of Cottonwood Creek) have the potential to be designated Prime Farmland (Figure 3-8). This determination cannot be confirmed at this time, as the NRCS has not completed a soil survey for the project area. The overall farmland impact rating was low, and as such the project impacts to farmland (similar for all build alternatives) are considered to be minor. The potential for cumulative impacts to agricultural land is addressed in Chapter 4.

The project would acquire approximately 90 ha (223 ac) of land from 24 parcels that are under Williamson Act contracts (Figure 3-6). Total amount of land covered by the 24 parcels is approximately 1905 ha (4707 ac). Impacts from the proposed project would be similar for all build alternatives, and would affect approximately 4.7% of Williamson Act land in the project area. Although state highway projects are generally exempt under Section 51293 from the provisions of this act, Caltrans notified the Director of the California Department of Conservation, as required, of the possible acquisition of Williamson Act contracted land (Appendix A). No comments on this notification were received; however, comments were received on the Notice of Preparation (NOP) for the DEIS/DEIR.

3.11.3 Mitigation

No mitigation is required.

Figure 3-6. Williamson Act Parcels

Figure 3-7. Farmland Impact Form

Figure 3-8. Potential Prime Farmland

3.12 Social and Economic

3.12.1 Affected Environment

State Route 149 is located in a rural area between the cities of Oroville and Chico, and is the major access route between these two urbanized areas. This two-lane conventional highway serves as a diagonal link between the SR 70 freeway to the southeast, and the SR 99 expressway to the northwest, and facilitates the movement of people, goods and services in the area.

Residential Property and Businesses

There are scattered rural residences within the project limits, but no concentrated residential or commercial areas. Residential parcels along SR 70 north of SR 149 and near a catfish farm on the east side of SR 99 just north of SR 149 could be affected by the proposed project. Five businesses located within the project limits could be affected by the proposed project: a catfish farm on the east side of SR 99 just north of the intersection with SR 149, the Book Family Farm on the west side of SR 99 just north of the SR 149 intersection, a strawberry farm on the south side of SR 149 west of Shippee Road, and two businesses on residential parcels on the west side of SR 70 north of SR 149.

Environmental Justice

Executive Order 12898 regarding Environmental Justice requires identifying and addressing, as appropriate, any disproportionately high and adverse human health or environmental effects of federal programs, policies and activities on minority (Black, Hispanic, Asian American, American Indian, or Alaskan Native) and/or low-income (household income at or below the Dept. of Health and Human Services poverty guidelines) populations. No minority or low-income populations have been identified within the project limits; therefore there would be no impact to these groups.

Pedestrian and Bicycle Facilities

Pedestrians and cyclists are currently allowed to use the SR 70, 149, and 99 roadway shoulders, though there are no official bicycle/pedestrian designations.

Utilities

Two sets of PG&E high transmission [500 kilovolt (kv) & 230 kv] electrical lines cross SR 149 near Shippee Road. Two Western Area Power Administration (WAPA) towers are present on the west side and one on the east side of SR 70, north of SR 149. PG&E 60/12 kv power lines are present along SR 70 near Table Mtn. Blvd and a PG&E 60 kv line and a gas transmission line are located at the SR 99/149 intersection. Pacific Bell fiberoptic and telephone lines are present along SR 149, 70 and 99.

3.12.2 Impacts

Right-of-way acquisition would consist of strips of land adjacent to the existing alignment, and areas needed for construction of interchanges and driveway access roads. The following impacts to houses/businesses would be similar for all build alternatives. There is no known controversy regarding these acquisitions; the Caltrans Right-of-Way staff has been in contact with affected property owners, who are fully aware of the proposed project.

Residential

Two residential parcels on the west side of SR 70 north of the SR 149 intersection would be acquired to accommodate the realignment of SR 70. Each of these parcels contains two residences (four total). Two other residences are located adjacent to the catfish farm north of the SR 99/149 intersection. Depending on the amount of property acquired from the fish farm, these residences may be affected.

Business

- Construction of the SR 99/149 interchange would require either partial or full acquisition of the property containing the catfish farm in the northeast quadrant of the SR 99/149 intersection. Current access to this business is directly from SR 99; this access would require relocation, as access along SR 99 would be limited to designated points. Depending on negotiations with the property owner, the parcel may be fully acquired, which would result in relocation of the business.
- A strawberry farm on the south side of SR 149 west of Shippee Road would be relocated to accommodate roadway widening and the SR 99/149 interchange ramps.

- Currently, access to the Book Family Farm on the west side of SR 99 north of the SR 99/149 intersection is available directly from SR 99. This access would be closed, and future access would be provided through construction of a frontage road from the Book property north to the intersection of Durham/Dayton Highway and SR 149. Access to the Book Farm would be maintained during the construction period.
- One of the residential parcels that would be acquired on the west side of SR 70 north of SR 149 contains a construction/agriculture business, and the other parcel contains a small cattle operation. These businesses would be relocated to accommodate the SR 70 realignment.

Pedestrian and Bicycle Facilities

As the proposed project is currently designed, pedestrian and bicycle access would not be maintained along SR 149, due to the closed access nature of the interchanges and SR 149 roadway. Bicycle access would still be available between Oroville and Chico along the following route:

- Table Mountain Blvd. to former SR 70 (to be converted to a county road) to SR 191 to Durham-Pentz Road to SR 99

In addition, bicycle access would still be available on Routes 99 and 70.

Traffic

All Build Alternatives would result in improved traffic flow along SR 149 due to reduced congestion and fewer accidents. This would be a beneficial impact in the area.

Public/Emergency Services

The proposed project would have a beneficial impact on fire protection, law enforcement, emergency and other public services by improving safety and response time along SR 149. The No-Build Alternative would likely have negative impacts on these services, since congestion and safety concerns would not be improved.

Utilities

One support tower associated with the two sets of PG&E high transmission (500 kv) electrical lines near Shippee Road would require relocation outside the proposed right-of-way. The PG&E 60/12 kv power lines and gas transmission line would also be relocated, as well as portions of the Pacific Bell fiber-optic and telephone lines. The two WAPA towers on the west side of existing SR 70 would be eliminated, and would be replaced by three towers. One additional tower would be constructed on the east side of SR 70. This work is necessary to accommodate the realignment of SR 70 and construction of the SR 70/149 interchange. Impacts associated with this work would consist of removal of existing vegetation, and would be similar for all build alternatives. As with all Caltrans projects, the Department would coordinate closely with the utility companies to ensure minimum disruption of service to customers in the project area.

3.12.3 Compensation

Property owners would be compensated the fair market value for any land or improvements acquired by the State. Caltrans and FHWA would provide relocation assistance in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Appendix I).

Relocation resources are available to all residential and business relocates without discrimination. These issues would be handled during the right-of-way negotiations phase of the project. Access to businesses and residences would be maintained throughout the construction period.

Removal of existing vegetation as a result of utility relocation would be addressed under Caltrans' Standard BMPs for erosion and water quality.

3.13 Traffic and Transportation

3.13.1 Affected Environment

State Route 149 is an undivided two-lane rural highway, 7.4 km (4.6 mi) in length, with 3.6 m (12 ft) lanes and 2.4 m (8 ft) outside shoulders. It is a connecting link between the four-lane SR 70 freeway north of Oroville and the four-lane SR 99 expressway south of Chico. It serves inter-regional and local commuter traffic (*Caltrans 2000*). Passing movements occur in the opposing traffic stream; therefore as traffic volumes increase, opportunities for passing decrease. Current operating characteristics are rated at LOS C.

The major traffic pattern on SR 149 is from Oroville to Chico and vice versa. This highway serves as a diagonal link between the SR 70 freeway and SR 99 expressway, and is the only remaining two-lane section of State highway along the corridor between Oroville and Chico. The 4.6 mi Route 149 section limits capacity, as traffic must transition from the four-lane divided freeway/expressway of Routes 70 and 99 to the undivided two-lane SR 149 highway (Figure 1-2). Traffic projections indicate SR 149 will not accommodate future demand at the accepted route LOS C, and in fact, the LOS is projected to drop to E by the year 2020.

As stated in Chapter 1, safety concerns exist throughout the SR 70/149/99 corridor due to at-grade intersections and driveways. SR 70 south of SR 149 is a four-lane freeway, and SR 99 north of SR 149 is a four-lane expressway. Vehicles entering SR 149 from these two facilities often encounter stopped traffic as vehicles wait for a break in through traffic to turn onto Route 149, a local road, or a driveway. The SR 70/149 and 99/149 intersections currently have accident rates well above the statewide average (Table 1-4).

The following public transit options are available along SR 149:

- Public transit service is provided by Butte County Transit, with eighteen round trips provided daily between Chico and Oroville via SR 149.
- Greyhound bus Lines operates four round-trip buses per day between Sacramento and Chico via SR 149, with a capacity of 47-54 passengers per vehicle.
- Amtrak Motor Coach operates three round-trip buses per day between Sacramento and Chico via SR 149, with a capacity of 44 passengers per vehicle.

Pedestrians and cyclists are currently allowed to use the SR 70, 149, and 99 roadway shoulders, though there are no official bicycle/pedestrian designations.

3.13.2 Impacts

The proposed project would result in improved traffic flow (LOS B or better) along SR 149 due to reduced congestion. Accident rates would be reduced with construction of the SR 70/149 and 99/149 interchanges. These would be beneficial impacts to local and regional traffic, and would improve the movement of goods and services in the area.

As the proposed project is currently designed, pedestrian and bicycle access would not be maintained along SR 149, due to the closed access nature of the interchanges and SR 149 roadway. Access would still be available between Oroville and Chico along the following route, which is identified in the Butte County Bicycle Plan:

- Table Mountain Blvd. to former SR 70 (to be converted to a county road) to SR 191 to Durham-Pentz Road to SR 99

In addition, bicycle access would still be available on Routes 70 and 99.

3.13.3 Mitigation

None required.

3.14 Visual

3.14.1 Affected Environment

Many elements of the landscape visible from the project area are the product of one of several periods of increased volcanic activity common along the West Coast of North America. Basalt rock outcrops, buttes and volcanic soils, which are common throughout the region, are remnants of an active volcanic period that occurred over 1 ½ million years ago. Rivers and streams have modified the landscape by collecting soil materials in the higher foothills, buttes and volcanic outcrops and then depositing these materials to the valley floor where the flat topography slows the water flow and allows for sediment deposition.

The visual character of much of the area is predominantly a natural landscape of rolling grasslands. The foothills and buttes visible to the north and east feed three main creeks that intercept SR 149. To the east, Gold Run Creek drains from South Table Mountain, and both Clear and Dry Creeks drain from the foothills to the north. Numerous vernal pools and swales are present in the project area, and they support seasonal wetland vegetation and organisms. A good example of the vernal pool and swale landscape is found on the north side of SR 149 between the bridge over Clear Creek and the SR 99 intersection.

Clay rich soils in the project area prevent water infiltration, resulting in water ponding in some of the lower spots on the landscape and creation of wetland conditions. State Route 149 crosses this type of wetlands near the intersection with SR 70.

3.14.2 Impacts

The proposed interchanges would provide three levels of roadway at the SR 70/149 and 99/149 intersections. This would place the highest overpass at approximately 17 m (56 ft) above the ground. Existing views of the foothills to the east would be partially blocked by these new structures. The overpass structures at the SR 70/149 intersection would block western and northwestern views of the middle ground and background for residents north of the intersection. Regional views from the orchard to the north of this intersection would also be impacted by the overpass structures. Views of the Campbell Hills from the orchard may be lost. Interchange structures at the SR 99/149 intersection would impact views in a similar manner, though not as extensively. A small butte to the west of this intersection would help the structures blend in with the background.

Views from the overpasses would also provide a positive visual experience for the traveling public. These structures would provide a better view of the region, which includes some of the more identifiable landscape elements such as the Sutter Buttes, Campbell Hills and the Central Coast Range.

West of the SR 70/149 intersection, SR 149 cuts through a section of rolling hills adjacent to the roadway. Slopes on both sides of the highway currently block views of the middle ground and background to the north and south. Widening of the roadway would reduce the tunnel effect for the driving public, and may improve views in this area. Visual impacts along the remainder of SR 149 would mainly involve loss of vegetation.

3.14.3 Mitigation

Impacts to the visual character of the project area would be mitigated by the following measures:

- Slopes along the interchange ramps would be constructed at a 2:1 slope or flatter when possible to allow blending with the surrounding landscape.
- Slopes of the interchange ramps would be planted with native vegetation (including grasses, trees and shrubs).
- Revegetation with native species would occur in disturbed areas throughout the project area.

3.15 Historic and Archaeological Preservation

Federal regulations for historic properties are governed primarily by Section 106 of the National Historic Preservation Act (NHPA) of 1966 (as amended). Section 106 requires federal agencies to take into account the effects of their actions on historic properties, and provides the Advisory Council on Historic Preservation the opportunity to comment on such actions. For compliance with NEPA, the FHWA follows the Council's implementing procedures contained in 36 Code of Federal Regulations (CFR) Part 800. Historic and archaeological resource studies performed pursuant to these statutes are documented in a Historic Property Survey Report (HPSR) prepared by Caltrans. For compliance with CEQA, the State Historic Preservation Office (SHPO) must provide concurrence with Caltrans findings regarding project impacts.

3.15.1 Affected Environment

The Area of Potential Effects (APE), approved by the Federal Highway Administration (FHWA) and the State Historic Preservation Officer (SHPO) for this project, involves approximately 362 ha (895 ac) of land. Four Caltrans archaeologists with a combined experience of over 100 years in prehistoric and historic archaeology, and an architectural historian conducted an intensive pedestrian archaeological and historic architectural survey of the APE and adjacent lands. This survey resulted in the identification of a number of cultural resources. These resources include:

- The Berkeley Olive Association Historic District;
- Fifteen bridges; nine within and six adjacent to the APE;
- Nine architectural properties constructed prior to 1954;
- Eleven architectural properties constructed after 1954;
- Six historic-era properties:
 - Wick Ranch (CA-BUT-1277H, outside the APE)
 - Gold Run Creek Homestead (outside the APE)
 - Dry Creek Tailings (outside the APE)
 - Cherokee Mine Levee (outside the APE)
 - World War II Practice Landing Field
 - Berkeley Olive Association Camp (outside the APE)

The SHPO has concurred with FHWA's determination that the Berkeley Olive Association Historic District is eligible for the National Register of Historic Places. This resource is also historical for the purposes of CEQA. All of the bridges and architectural properties, the World War II Landing Field and the Berkeley Olive

Association Camp were determined not eligible for the National Register by consensus of FHWA and the SHPO and are not historical resources for the purposes of CEQA. The Wick Ranch, Gold Run Creek Homestead, Dry Creek Tailings and Cherokee Mine Levee are located outside the APE. In consultation with the SHPO, these resources have not been formally evaluated for eligibility, as they would not be affected by project construction (*Caesar 2000*). Concurrence letters from the SHPO regarding determinations of eligibility and effect may be found in Appendix A.

3.15.2 Impacts

Historic properties, which include archaeological resources, are those that are listed on or eligible for listing on the National Register of Historic Places. Resources that are historical for the purposes of CEQA meet criteria outlined in the CEQA Guidelines and Section 5024.1 of the California Public Resources Code. Adverse impacts can occur if these resources are removed, damaged or have their value diminished. Caltrans prepared a Historic Property Survey Report (HPSR) that discusses in detail the potential impacts of the proposed project.

Properties eligible for the National Register of Historic Places/Historical resources for the purposes of CEQA

The Berkeley Olive Association Historic District would not be affected because the proposed project has been designed to avoid this historic property, which is outside the APE. The SHPO has concurred with this finding (Appendix A).

Properties not eligible for the National Register/Resources not historical for the purposes of CEQA

- All of the bridges and architectural properties, as well as the World War II Landing Field and the Berkeley Olive Association Camp were found not eligible for the National Register and are not historical resources for the purposes of CEQA. Under regulations set forth in Section 106 of the National Historic Preservation Act and CEQA, no further consideration of these resources is required.

Other properties

The Gold Run Creek Homestead, Dry Creek Tailings, Wick Ranch and Cherokee Mine Levee are outside the APE for the proposed project.

The SHPO has concurred that no historic properties would be affected by the proposed project (Appendix A).

3.15.3 Mitigation

No mitigation is required. However, the Gold Run Creek Homestead, Dry Creek Tailings and Cherokee Mine levee would be designated as Environmentally Sensitive Areas (ESAs) on project plans to ensure their protection during construction.

If buried archaeological materials are encountered during construction, it is Caltrans' policy that work temporarily cease in the area of the find until a qualified archaeologist can evaluate the nature and significance of the materials and consult with the State Historic Preservation Officer about disposition of the materials (*Environmental Handbook*, Vol. 2, Chapter 1). In the event that human remains are discovered or recognized during construction, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the appropriate county coroner has determined that the remains are not subject to provisions of Section 27491 of the Government Code. If the coroner determines the remains to be Native American, he shall contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC will appoint a Most Likely Descendent for disposition of the remains (Health and Safety Code Sect. 7050.5, Public Resources Code Sect. 5097.24).

3.16 Growth Inducement

NEPA and CEQA guidelines require discussion of the potential growth-inducing impacts of a proposed project. Growth inducement in terms of transportation projects can be defined as the relationship between the proposed project and growth within the project area. This relationship is often difficult to quantify accurately since the growth that happens after the project is constructed is usually indirect and occurs over a period of time. The relationship is often regarded as either one of facilitating planned growth or inducing unplanned growth.

As a result of the NEPA/404 Integration Process followed for the proposed project, Caltrans agreed to study the potential for growth inducing effects from the proposed SR 70/149/99/191 and two other transportation projects, Sutter/Yuba 70 Upgrade and Marysville Bypass, in the adjacent counties of Sutter and Yuba along the SR 70 corridor from Sacramento to Chico. A detailed discussion is available in the SR 70

Growth Inducement Report (*Caltrans 2000*). Additional discussion may be found in the following sections of Appendix B, Comments Received on Draft EIS/EIR: Responses to EPA, #s 1-10; Responses to DFG, # 14; Responses to Butte Environmental Council, #s 8-10.

Projects may induce growth by:

- removing obstacles to growth, such as land use designation,
- stressing existing facilities/services to the extent that new ones are required,
- encroaching on a previously isolated open space,
- fostering economic expansion.

Caltrans projects are designed to accommodate existing traffic and traffic projected to be generated by growth planned in accordance with local and regional plans and policies, as required by State and federal laws and regulations. As a result, local governments determine the extent of desired growth, and then, subject to available resources and in cooperation with local and private entities, Caltrans may provide transportation facilities and services needed to accommodate such growth (*Caltrans 2000*). However, this is not to say that State highway projects are never growth inducing. It is important to determine the cause of growth. If the improvements are only a reaction to planned growth trends, then the project is growth accommodating. If the project is the impetus to extensive, unplanned growth, then the project is growth inducing. Whether or not a project would induce unplanned growth depends on many factors such as economic, social, physical, and political.

The proposed SR 70/149/99/191 in Butte County is a gap-closure between the four-lane SR 70 freeway to the southeast and the four-lane SR 99 expressway to the northwest. It is intended to address existing safety issues, existing traffic demand, and traffic demand projected for the next twenty years. Table 1-2 presents existing traffic demand in the proposed project area and the 20-year predicted demand.

Currently, SR 149 is operating at a LOS C (Table 1-1). From the predicted traffic demand shown in Table 1-2, the existing highway cannot be expected to maintain this LOS in the future, and in fact is expected to drop to an unacceptable LOS E without improvements.

The SR 70/149 and 99/149 interchanges are access controlled, freeway-to-freeway design, with no access allowed on or off the highway system. This lack of access would limit the potential for development in the area. Four freeway-to-freeway interchanges in similar rural settings in California (I-5/I-505, I-5/SR 138, I-5/I-580, and I-5/I-205) have not experienced extensive development. Based on the predicted traffic demand and the controlled access nature of the proposed facility, the proposed project should be considered growth accommodating. In addition, the forthcoming Butte County HCP is intended to address indirect effects from the proposed and other projects in the county.

The SR 70 Sacramento to Chico Corridor improvements would increase the State Highway System capacity within these areas, with the intent of improving inter-regional travel. The Butte County Association of Governments (BCAG) and the Sacramento Area Council of Governments (SACOG) have determined that, given the current and projected growth in the Northern Sacramento Valley, it is necessary to provide a freeway to serve the Chico, Oroville, Marysville and Yuba City areas that are currently not linked to the State freeway system. The proposed project is one of several highway improvements proposed to improve mobility and the movement of goods and services in this corridor. The cities of Chico, Oroville, Marysville, and Yuba City and the land bordering the current facilities have highway access to the major developed centers in the region, most notably the Greater Sacramento area. Future development expected in this region has already been planned, and would occur regardless of capacity additions to the State Highway System (SHS). The following table presents population predictions for Butte, Sutter, and Yuba Counties:

Table 3-12. Population Projections by County

(Numbers rounded to nearest hundred)

County	2000	2010	2020	Increase from 2000 to 2020	% change 2000 to 2020
Butte	203,200	244,000	293,500	90,300	44.4
Sutter	78,500	98,400	121,600	43,100	54.9
Yuba	61,500	78,000	97,600	36,100	58.7

Source: BCAG, SACOG, 2001

These numbers indicate steady population growth in the three counties regardless of highway improvements. The majority of growth is planned for Specific Plan areas (Figure 4-2). Growth in Sutter County along SR 70 is constrained primarily by public

opinion with respect to housing in this agricultural area (*Caltrans 2001*). County residents through referendums turned down two proposed developments. There are many growth-restricting factors in Butte County. There are a considerable number of acres zoned agriculture in the region, nearly twice as many as all other zoned types combined. The County has set policies to restrict developing agriculture land, and to direct development to existing urban areas, further protecting the land in the corridor from development. The burden of mitigating traffic, road costs, and providing public services also would force development toward existing urban areas. There are many special status species in the County and at least two confirmed in the area that must be addressed before development occurs.

The area within the SR 70 Sacramento to Chico corridor that has the greatest potential for growth is in Yuba County, which currently is working on establishing infrastructure for the Plumas Lake Specific Plan. This plan allows for orderly development within the area that can move forward, depending on economic recovery, regardless of the status of the corridor improvements. Some of the later phases of the development are contingent upon access and transportation opportunities that the Sutter/Yuba 70 improvements would provide. However, it is not anticipated that the influx of development would exceed that which is projected in the local general plans.

The various General Plans in the region (Butte, Sutter and Yuba counties) have also made declarations towards protecting the environment. Each county has multiple endangered or threatened species that must be protected to ensure their survival, and other environmental concerns that restrict development including: state flood easements (Yuba County), habitat conservation easements (Yuba County, Butte County, and District 10/Honcut Creek Area), designated wildlife areas (Table Mountain, Oroville, and Marysville), major floodplains (Feather River, Yuba River, and Bear River), and perpetual conservation easements (City of Chico). These areas would likely remain in their existing forms because they limit incompatible land uses such as development.

The SR 70 Sacramento to Chico Corridor improvements will increase capacity and make travel in the region quicker, achieving inter-regional transportation goals, but they would not be the deciding factor for development. Many factors are required for extensive growth to occur, including increased economic activity, re-zoning, environmental conditions and altering the public attitude toward development. The

proposed projects would not connect new regions to the State Highway System since all of the areas already have access.

Project-induced growth is not expected as a result of the proposed SR 149 highway widening due to the rural nature of the project area, lack of infrastructure, environmental constraints, General Plans that focus growth in the Greater Oroville and Chico urban areas, and the forthcoming Butte County HCP. Growth in the SR 70/149/99 corridor would be based mostly on zoning, economic recovery of the region, housing demand (predominantly from the Sacramento market), and policies of local governments. While some growth will likely occur in the area, it is not anticipated to be substantial. The SR 70 Sacramento to Chico Corridor improvements would assist the local governments in accommodating already planned future growth.

3.17 Short-Term Uses of the Human Environment and Long-Term Productivity

Construction of the proposed project would result in short-term environmental impacts that could include:

- Removal of wetlands
- Removal of special status plant and wildlife habitat
- Removal of vegetation
- Changes in the visual environment

However, the proposed project would result in increased operating efficiency of the of the SR 70/149/99 transportation corridor by:

- decreasing congestion,
- improving safety,
- providing an inter-regional transportation facility

This translates into increased long-term productivity of the transportation system on a local level and for the region and state as a whole, with improved movement of goods, services and people. Preservation of wetland and special status species habitat

(included in project mitigation) would also contribute to the long-term productivity of the region.

3.18 Irreversible and Irretrievable Commitment of Resources

Implementation of the proposed action involves a commitment of a range of natural, physical, human, and fiscal resources. Land used in the construction of the proposed facility is considered an irreversible commitment during the time period that the land is used for a highway facility. However, if a greater need arises for use of the land or if the highway facility is no longer needed, the land can be converted to another use. At present, there is no reason to believe such a conversion would ever be necessary or desirable.

Considerable amounts of fossil fuels, labor, and highway construction materials such as cement, aggregate, and bituminous material are expended. Additionally, large amounts of labor and natural resources are used in the fabrication and preparation of construction materials. These materials are generally not retrievable. However, they are not in short supply and their use would not have an adverse effect upon continued availability of these resources. Any construction would also require a substantial one-time expenditure of both state and federal funds, which are not retrievable.

The commitment of these resources is based on the concept that residents in the immediate area, state, and region would benefit by the improved quality of the transportation system. These benefits would consist of improved accessibility and safety, savings in time, and greater availability of quality services, which are anticipated to outweigh the commitment of these resources.

Chapter 4 Cumulative Impacts

Both NEPA (*40 CFR 1508.7*) and CEQA [*Guidelines Section 15130(a)*] require a discussion of cumulative impacts when a project's incremental effects are cumulatively considerable when taken together with those of closely related past, present and reasonably foreseeable projects. Cumulative effects analyses are typically difficult to thoroughly assess due to a lack of definitive information on future development projects. This analysis uses the best available information to assess the potential for cumulative effects from the proposed project.

4.1 Cumulative Effects Area

For the proposed project, the area for evaluation of cumulative effects (as requested by resource agencies during NEPA/404 coordination) is the SR 70/149/99 corridor between Sacramento and Chico (Figure 4-1). This area lies entirely on the eastern valley floor of the Sacramento Valley within the Feather River watershed. This area was selected because it would be most influenced by the highway upgrades in the corridor. As discussed earlier, Routes 70 and 99 were studied in the 1986 Route Concept Report, 1990 Regional Transportation Plan (SACOG), and State Routes 70 and 99 Corridor Study (BCAG, SACOG). The conclusion of these studies identified SR 70 as the primary transportation corridor linking Sacramento and Chico, and the preferred route for transportation upgrades.

4.2 Projects Considered in Cumulative Effects Evaluation

The following projects, described in Table 4-1, have been included in the cumulative effects evaluation, as they are located along the SR 70 corridor or in the general vicinity of the proposed SR 70/149/99/191 project in Butte County:

- SR 70/149/99/191 Highway Upgrade (proposed project)
- But-70 Freeway Extension and Ophir Road Interchange
- Yuba/But 70 Marysville to Oroville Freeway (Marysville Bypass)
- Sutter/Yuba 70 Highway Upgrade
- Algodon Road/SR 70 Interchange
- But-99 Roadway Rehabilitation

Figure 4-1. Routes 70/149 Highway Projects

Table 4-1. Cumulative Effects Corridor Projects

Projects Considered	Major Project/Planning Components	Major Biological Resources/Issues	Mitigation/Conservation Elements
Caltrans/FHWA Projects			
Route 149 Expressway Upgrade	Expressway upgrade on existing Route 149; presently three proposed alternatives linking Route 70 and 99	VELB, special-status shrimp habitat, <i>Limnanthus</i> , wetland habitat impacts	LEDPA, mitigation on-site and at approved mitigation bank
Route 70 Expressway Upgrade	Expressway upgrade on existing Route 70 from 70/99 split to McGowan in Olivehurst (includes Nicolaus Bypass)	GGs habitat, VELB, special-status shrimp habitat, anadromous fisheries, wetland impacts	LEDPA, mitigation at approved State and private mitigation banks
Marysville Bypass	Completely new Route 70 freeway adoption with controlled access interchanges at 99 and 70; presently three proposed alternatives from 70/65 split north to Oroville	VELB, special-status shrimp habitat, <i>Orcuttia</i> , new Yuba River and Honcut Creek crossings, wetland impacts, District 10 waterfowl/raptor habitat impacts	LEDPA, impacts and mitigation to be determined
Route 70 Freeway Extension/ Ophir Rd Interchange	Extend Route 70 freeway to new interchange at Ophir Rd.	Wetland and pond impacts, VELB	Mitigation on-site and at approved mitigation bank
Algodon Road /SR 70 Interchange	Interchange in association with Plumas Lake Specific Plan and possible Motorplex	Wetlands, GGS habitat, special-status shrimp habitat, Swainson's hawk habitat	Mitigation on-site for GGS habitat; other mitigation at approved mitigation banks
But-99 Rehabilitation	Rehabilitate roadway, construct shoulders	VELB, special-status shrimp habitat, anadromous fisheries, wetlands	Mitigation at approved State and private mitigation banks
Local Planning Documents			
<u>Sutter County</u>			
Yuba City Urban Plan	Development mostly confined to the immediate vicinity of Yuba City which is largely orchards	Very little to no natural habitat in the Yuba City vicinity	Preservation of Feather River
<u>Yuba County</u>			
Yuba County General Plan	Commercial and industrial development along Route 65 corridor	Wetlands associated with Reed's, Hutchinson, and Kimball creeks, vernal pool parcel south of Erle Road	Preservation of Reed's, Hutchinson, and Kimball creeks (State flood control easements)
North Arboga Study Area	Residential and commercial development south of Olivehurst and adjacent to the Plumas Lake Specific Plan	Special-status shrimp habitat (limited), wetland impacts, limited GGS habitat	No net loss of wetlands, protection of sensitive biological areas, development setbacks from drainages and water courses

Chapter 4 Cumulative Impacts

Plumas Lake Specific Plan	Residential and commercial development extending south of the North Arboga Study Area along Route 70 corridor	Special-status shrimp habitat, GGS habitat, wetland impacts	Preservation of riparian areas, development setbacks from drainages and riparian corridors, consultation with USFWS/CDFG on any listed species
East Linda Specific Plan	Residential and commercial development extending east of Linda	Some seasonal wetlands and drainages—minimal habitat for sensitive species	Wetland resources protection
Yuba County Motorplex and Amphitheater	Racetrack, amphitheater, and business park development south of Linda/Olivehurst	seasonal wetlands and marsh habitat	Preservation of Kimball Creek (largest wetland areas); on-site wetland mitigation within Kimball Creek area
City of Marysville General Plan	City built-out, growth in vacant or redevelopment areas	Feather River and Yuba River	Preservation of Feather and Yuba River, Marysville Wildlife Area
North Marysville Specific Plan	North extension of Marysville for residential and commercial development. Presently not approved. Flood control a constraining element	District 10 winter waterfowl habitat, seasonal marsh impacts	Preservation of Jack and Simmerly Sloughs (largest wetland/riparian areas)
Spring Valley Specific Plan	Residential community northeast of Marysville and District 10 waterfowl area on Route 20	Wetland impacts including possible isolated vernal pools and seasonal marsh habitats	Preservation of wetlands through open space areas and conservation easements
<u>Butte County</u>			
City of Oroville General Plan	Planned growth (residential, commercial, industrial) confined within the Oroville General Plan area	VELB, vernal pools and associated sensitive species, extensive riparian areas, Feather River (anadromous fisheries)	Several conservation areas designated in the General Plan, including vernal pool and riparian areas, Lake Oroville, Feather River and Wyandotte Creek corridor, and Oroville Wildlife Area
City of Chico General Plan	Planned growth (residential, commercial, industrial) confined within the Chico General Plan area	VELB, vernal pools and associated sensitive species, Big Chico and Butte creeks (anadromous fisheries)	Perpetual conservation areas along Big Chico, Butte, and Sycamore creeks
Butte County General Plan		VELB, vernal pools and associated sensitive species, wetlands, BCM,	Preservation of open space

VELB = valley elderberry longhorn beetle; GGS = giant garter snake; BCM = Butte County Meadowfoam; LEDPA = least environmentally damaging practicable alternative in coordination with the resource and regulatory agencies

Other non-federal projects that would most likely occur in the action area include primarily residential and commercial development. These actions are largely based on build-out and growth patterns consistent with approved land-use plans. Land use planning documents used in this analysis include Sutter County, Yuba County, Butte County, City of Marysville, City of Oroville, City of Chico, and Yuba City Urban Area general plans (*Caltrans 2000*). Figure 4-2 shows the location of these local planning areas of planned growth.

4.3 Cumulative Effects

Caltrans/FHWA transportation projects would largely be confined to the existing highway corridors, with the exception of some of the Marysville Bypass alternatives. Most of the transportation projects would essentially upgrade highway capacity on existing corridors in the region in response to anticipated growth, safety concerns, and level of service.

Based on local planning documents, anticipated growth within the cumulative effects area is expected to continue to be concentrated, for the most part, around existing developed communities, including Yuba City, Olivehurst, Linda, Marysville, Oroville, and Chico. Generally, agricultural lands are the dominant land use in the cumulative effects area and preservation of these lands, as well as remnant natural habitat areas, is a primary planning goal as emphasized by city and county planning policies. It appears that, for the foreseeable future, agricultural uses would continue as the primary land use outside the areas identified for planned growth. The proposed project is not expected to induce growth in the area.

4.3.1 Biological Resources

Biological resources considered in the cumulative effects analysis include habitats supporting special-status species and other sensitive resources (i.e., wetlands). Federal-listed species considered in this evaluation include valley elderberry longhorn beetle (VELB), listed shrimp species, and Butte County Meadowfoam (BCM). The cumulative effects to other federally listed species (e.g., Giant Garter Snake) not directly affected by the SR 70/149/99/191 upgrade but potentially occurring in other areas that may be affected by other Caltrans/FHWA projects would be addressed in documents for those projects.

Figure 4-2. Areas of Planned Growth

Vernal Pools

Vernal pools are the most sensitive resource in the cumulative effects area because they provide habitat for most of the listed species in the area. Vernal pools were mapped based on aerial photos covering the region, field reconnaissance and surveys, and the CNDDDB (1999).

The distribution of vernal pools is largely concentrated in the northern part of the cumulative effects area in Butte County, with more fragmented and isolated pools in the southern part of the area. Because of the wide distribution of vernal pools, it is difficult to totally avoid these resources by future planned freeways and developments, and it would be anticipated that additional losses would occur. Several specific and general plans including East Linda Specific Plan, North Marysville Specific Plan, Yuba City Urban Area, City of Marysville, and North Arboga Study Area do not have or have very little vernal pool habitat. Specific and general plans that have vernal pool habitat include Oroville and Chico general plans, Yuba County General Plan (Route 65 corridor development area), and the Spring Valley and Plumas Lake Specific Plans.

Within the cumulative effects area, approximately 8000 ha (19,760 ac) have been delineated as vernal pool habitat (*Caltrans 2000*). Conservatively estimating about an 8% density of actual vernal pool habitat in these areas, although several vernal pool complexes appear to have much higher densities (>15%), this would equate to about 640 ha (1,580 ac) of vernal pool habitat.

All of the projects considered in this cumulative impact discussion would have vernal pool impacts. The following table presents estimated impacts to vernal pools (permanent + temporary) from these five transportation projects:

Table 4-2. Vernal Pool and Swale Impacts

Project	Estimated Impact ha (ac) (perm. + temp.)	% of Total Cumulative Area Habitat
But-70/149/99/191 Upgrade	2.63 (6.5)	0.4
Ophir Road Interchange	1.8 (4.5)	0.3
But-99 Rehabilitation	0.68 (1.68)	0.1
Marysville Bypass	1.83 – 6.72 (4.52 – 16.61) depending on alternative selected	0.29 – 1.05 depending on alternative selected
Route 70 Expressway Upgrade	1.99 (4.92)	0.3
Algodon Rd. Interchange	0.13	0.02

Vernal Pool Fairy and Tadpole Shrimp

The proposed project would result in direct impacts to fairy shrimp/tadpole shrimp habitat of 29.33 ac. These would be mitigated through a combination of preservation (2:1 ratio) and creation (1:1 ratio) of habitat in consultation with USFWS. Indirect impacts are estimated to be 17.0 ac. Preservation of habitat at a 2:1 ratio is proposed for these impacts. These mitigation measures would minimize the cumulative effects to fairy shrimp and tadpole shrimp.

Impacts to vernal pool shrimp species resulting from the other projects listed in Table 4-2 would be mitigated on a project-by-project basis. This “cumulative mitigation” would serve to offset cumulative impacts to these species.

Butte County Meadowfoam

For the proposed project, Alternative 3 would avoid direct impacts to BCM. Mitigation for indirect impacts to 0.53 ac of habitat would minimize cumulative impacts. If BCM would be impacted by any of the other Butte County projects listed in Table 4-2, minimization and mitigation measures would also contribute to offset cumulative impacts.

Though there would be cumulative effects to vernal pool resources in the cumulative effects area, several areas do provide protection to these resources. In both the Oroville and Chico general plans, several areas where vernal pools occur are identified as open space and conservation elements in the plans identify avoidance measure to vernal pool habitats. Conservation easements in the District 10 area of Butte County include wetland and vernal pool resources that would be protected from development. The bulk of vernal pool resources, particularly in Butte County, occur outside planned growth areas, in areas largely zoned as agriculture. Current county policy is limiting growth to existing communities and would likely remain so in the foreseeable future. Areas that are zoned agriculture do not necessarily afford complete protection of these sensitive resources; however, this zoning designation does provide some protection to these resources from other incompatible uses such as development. Mitigation for impacts to vernal pool species and the associated wetland mitigation requirement for “no net loss” would minimize cumulative impacts. In addition, Butte County is currently in the process of establishing a Habitat Conservation Plan (HCP) that would regulate impacts on habitats within the County.

Valley Elderberry Longhorn Beetle

Valley elderberry longhorn beetle is essentially associated with elderberry shrubs found in riparian areas along rivers and creeks throughout the Central Valley and includes all of the cumulative effects area. Besides the proposed SR 70/149/99/191 highway upgrade, other projects that would potentially impact habitat for this species include the But-99 Rehabilitation, Marysville Bypass, Ophir Road Interchange, and Route 70 Expressway Upgrade.

Large rivers and creeks, particularly Feather River, Yuba River, Bear River, Honcut Creek, Jack Slough, Butte Creek, and Big Chico Creek support a high percentage of the riparian habitat in the cumulative effects area. These areas are prone to flooding, and have either been identified as open space and conservation areas by the local general and specific plans or are protected by CDFG (i.e., wildlife areas). Protection of these areas that likely support elderberry shrubs for VELB would help conserve this species in the cumulative effects area. In addition, property within the Bear River levees is likely to be acquired by CDFG (*Whitmore 2000*), which would further protect the existing elderberries.

The following table shows anticipated VELB impacts from projects in the cumulative effects area:

Table 4-3. VELB Impacts

Project	No. Shrubs	No. Stems >1"
SR 70/149/99/191 Upgrade	22	43 - 59
Ophir Rd. Interchange	7	26
But-99 Rehabilitation	3	15
Marysville Bypass	To be determined	To be determined
Route 70 Expressway Upgrade	22	27

The proposed SR 70/149/99/191 highway upgrade would impact approximately 22 elderberry shrubs. Avoidance and mitigation measures are proposed to reduce impacts from this and the other corridor projects to less than a significant level (CEQA). With these measures in place, the direct and cumulative impact to this species as the result of the proposed SR 70/149/99/191 is expected to be minimal.

Central Valley Chinook salmon and Steelhead

Central Valley Chinook salmon (spring-run and fall/late fall-run) and Central Valley steelhead occur throughout the cumulative effects area. These species primarily use the Feather River and several tributaries including Bear River and Coon Creek in the Route 70 Expressway Upgrade project area. Other Feather River tributaries that support these species in the cumulative effects area include Yuba River and Honcut Creek. In Butte County, in the northern portion of the cumulative effects area, tributaries that drain into the Sacramento River and are known to support these species include, Rock Creek, Dry Creek, Butte Creek and possibly Big Chico Creek.

Most of the areas planned for growth in the cumulative effects area do not encroach on major anadromous fish streams. In areas where anadromous rivers and creeks occur in local specific and general planning areas in the cumulative effects area, these resources have been identified as sensitive and the areas are designated as non-development areas, open space or conservation areas. Specifically, large stream reaches that are protected include conservation easements along Honcut Creek, Oroville Wildlife Area along Feather River (Oroville General Plan), and perpetual conservation easements along Big Chico and Butte creeks (Chico General Plan Area).

Cumulative effects to drainages that support these species in the cumulative effects area are expected to be relatively small, as the transportation projects are mostly linear. These types of projects typically do not permanently obstruct or divert natural streamflows and require specific procedures and timing restrictions during construction at stream crossings.

Swainson's Hawk

The proposed project has the potential to impact Swainson's hawk nesting and foraging habitat. Pre-construction surveys would identify potential nesting sites. Mitigation measures require protection or creation of equally suitable habitat within a 10-mile radius of impacted habitat. If required, this mitigation would reduce the potential for cumulative impacts to this species.

In addition, Caltrans is acquiring approximately 80 ha (200 ac) along the Bear River in Yuba County for Swainson's hawk foraging habitat mitigation for the SR 70 Expressway Upgrade project. This also contributes to the cumulative mitigation for this species.

4.3.2 Other Resources

The proposed SR 70/149/99/191 is not expected to contribute to cumulative effects to water quality, farmland, air quality or visual resources. Construction and minimization measures would reduce impacts in these areas to a less than significant level (CEQA).

4.3.3 Cumulative Effects Summary

Although regional growth would be concentrated in established community centers and transportation upgrades on existing State facilities, there still could be cumulative losses to sensitive biological resources. The SR 70/149/99/191 Upgrade project would contribute to these losses of vernal pools and wetlands that support federally listed species (including vernal pool invertebrates and Butte County Meadowfoam), and valley elderberry longhorn beetle. These losses would not be substantial with implementation of proposed project mitigation, and considering the extensive resources available in the cumulative effects area. Despite the likelihood of cumulative effects to these resources in the region, the cumulative individual mitigation and conservation measures identified in planning documents and required on Caltrans/FHWA transportation projects by resource agencies, as well as the forthcoming Butte County HCP would contribute to offset these effects.

In the cumulative effects area, agriculture is the predominant land use and has been identified as a high priority for preservation in local policies. In the foreseeable future, this land use would remain dominant even with full build out of all the planned growth areas identified in the cumulative effects. Much of the extensive agricultural area occurs outside the areas of planned development in areas where extensive vernal pool, rice fields, and other wetland resources provide essential habitat for sensitive species in the region. Although agriculture is not the best land use to protect sensitive species, these areas do curtail other incompatible uses such as development. Other elements that would limit growth in the region and provide habitat for many sensitive and common species include: State flood easements (Yuba County), habitat conservation easements (Yuba and Butte counties, District 10/Honcut Creek area), designated wildlife areas (Table Mountain, Oroville, Marysville), major floodplains (Feather River, Yuba River, Bear River), District 10 winter waterfowl area (Yuba County), and perpetual conservation areas (City of Chico). Because many of these areas limit incompatible land uses such as development, these areas would likely remain in their present condition.

Although there would be direct, indirect, and cumulative effects from the SR 70/149/99/191 Highway Upgrade, this project would not likely jeopardize the continued existence of listed shrimp species, Butte County Meadowfoam, valley elderberry longhorn beetle, and listed anadromous fish. This is based on measures to avoid, minimize and mitigate impacts to biological resources in the project area, land use constraints in the region, and extensive resources outside areas of foreseeable growth in the cumulative effects area. Additional discussion on this topic may be found in the following sections of Appendix B, Comments Received on Draft EIS/EIR: Responses to EPA, #15; Responses to DFG, #s 15 and 16; Responses to Butte Environmental Council, #11.

Chapter 5 Summary of Public Involvement Process/Tribal Coordination

5.1 Public Involvement

A Draft Initial Study/Environmental Assessment (Draft IS/EA) was circulated to the public May 15 to June 15, 2001. A public workshop was held on May 30, 2001 at Butte College, located off Durham-Pentz Road between Oroville and Chico. Many individuals expressed support for the proposed project, but a few expressed concerns about impacts to Butte County Meadowfoam. Several resource agencies commented that they felt the project impacts would be substantial, and an EIS/EIR was warranted. After consideration of public and agency comments, FHWA and Caltrans decided to prepare a DEIS/DEIR. A Notice of Intent and Notice of Preparation stating this decision were sent to federal and State Cooperating/ Responsible Agencies, and to other federal, State, regional and local agencies as appropriate.

The DEIS/DEIR was available for public review and comment from June 15, 2002 to July 29, 2002. Another public workshop was held on July 10, 2002. Comments received during the review period are included in Appendix B.

5.2 NEPA/404 Integration Process

In 1994, Caltrans, FHWA, and various resource agencies signed a Memorandum of Understanding (MOU) that integrated the environmental approval and permitting processes for projects requiring both approval under NEPA and a USACOE Section 404 (Clean Water Act) Individual permit. Under this “concurrent process,” USACOE, USFWS, USEPA, and NMFS participate in the project development process at a level dependent on the quality and quantity of the resources involved. Agencies may, at their discretion, choose not to participate until the draft document review stage.

An initial interagency coordination meeting for the proposed project was held in April of 1997 with representatives from Caltrans, USACOE, USFWS, USEPA and CDFG in attendance. Three alternatives for widening SR 149 (Widen South, Widen North and Widen to both sides – “Avoid Meadowfoam”) were presented at this meeting. It was Caltrans’ understanding that the agencies in attendance gave concurrence to the project purpose and need, criteria for selecting alternatives, and the range of alternatives to be studied. However, no written record of this concurrence was made.

A second interagency meeting was held in March of 1999 to present updated project information to the above mentioned resource agencies. Concerns were expressed by several of the agencies that the project purpose was not specific enough and that a wider range of alternatives needed to be investigated. Consequently, Caltrans and FHWA revised these items, presented the revisions to the resource agencies, and requested written concurrence in June of 1999. After two dispute resolution meetings (8/18/99 and 9/1/99), written concurrence for project purpose and need, criteria for selecting alternatives, and range of alternatives was received in September of 1999 from USFWS and USACOE, and in October of 1999 from USEPA (Appendix C). No response was received from NMFS.

In November of 2001, Caltrans and FHWA submitted to the USACOE a delineation of waters (including wetlands) within the project limits that are under USACOE jurisdiction. Written concurrence to this delineation was received from USACOE in February of 2002.

Agencies involved in the NEPA/404 process reviewed the draft EIS/EIR during the public circulation period. In August 2002 Caltrans, FHWA, USEPA and USACOE identified Alternative 3 as the preferred alternative/Least Environmentally Damaging Practicable Alternative (LEDPA). Evaluation of specific project impacts and proposed mitigation were based on this alternative. In November 2002 USFWS issued a non-jeopardy Biological Opinion for impacts to threatened and endangered species, and NMFS provided concurrence with the conclusion that the project would not be likely to adversely affect Essential Fish Habitat for Chinook salmon. A Habitat Mitigation and Monitoring Proposal was sent to USEPA, USFWS and USACOE for review, and these agencies provided concurrence to the plan (Appendix C). A Section 404 individual permit from USACOE and a Section 401 certification/waiver from the RWQCB would be obtained prior to project construction.

5.3 Tribal Coordination

Request for information letters were sent to the following local historical society/historic preservation groups on the dates shown:

- Butte County Historical Society (12/2/92; 9/21/99)
- Paradise Fact and Folklore (9/21/99)
- Cherokee Museum Association (9/21/00)

Request for information letters were sent to the following Native American groups:

- Native American Heritage Commission (12/2/92; 9/21/99)
- Berry Creek Rancheria (12/2/92; 9/21/99)
- Butte Tribal Council (12/2/92; 9/21/99)
- Chico Band of Mechoopda Indians (9/21/99)
- Ms. Beryl Cross (12/2/92; 10/1/99)
- Enterprise Rancheria of Maidu Indians (9/21/99)
- Maidu Nation (9/21/99)
- Mr. Joe Marine (10/1/99)
- Mr. Marvin Marine (10/1/99)
- Mooretown Rancheria of Maidu Indians (12/2/92; 9/21/99)

The Native American Heritage Commission provided the only response to the request for information letters, in both 1992 and 1999. They responded with updated lists of most likely descendents for the area. Further information is contained in the Historic Property Survey Report, available at Caltrans District 3, 703 B Street, Marysville, CA.

Chapter 6 California Environmental Quality Act Evaluation

Information in this chapter is presented to clarify the requirements of the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The proposed project could have an adverse impact on the environment, and must satisfy requirements of both laws, since both Caltrans and the FHWA must make project decisions. A combined FEIS/FEIR has been prepared in accordance with NEPA and CEQA.

CEQA requires a determination of significant impacts be stated in the environmental document (EIR), and this information is presented in this chapter. Under Section 15382 of the CEQA Guidelines, “significant effect” is defined as “... a substantial, or potentially substantial adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.” Caltrans, as the lead agency under CEQA, would prepare a Statement of Overriding Considerations for any significant impacts that would not be avoided or substantially lessened with mitigation. This would become part of the record of project approval.

NEPA does not require a determination of significant effects in an EIS. FHWA uses the term significant to describe Section 4(f) resources (Department of Transportation Act), Section 106 properties (National Historic Preservation Act), and floodplain impacts (Executive Order 11988).

6.1 Significant Impacts

6.1.1 Special Status Species

CEQA Significance: Will the project have a substantial adverse effect, directly or through habitat modifications, on special status species?

The following federally listed endangered or threatened species associated with vernal pools and swales would be directly, indirectly or cumulatively impacted by the proposed project: Vernal Pool Fairy Shrimp, Vernal Pool Tadpole Shrimp and Butte

County Meadowfoam. All build alternatives could impact these species, though to a different degree (see Tables 3-9 and 3-10). Mitigation is proposed for direct and indirect impacts to vernal pool shrimp habitat. Alternative 3 (Avoid BCM) would avoid direct impacts to BCM, and mitigation is proposed for indirect impacts. However, impacts to these species could be considered cumulatively significant, meaning that the incremental effects of the project could be considerable when viewed in connection with the effects of past, current and probable future projects (see Chapter 4).

6.1.2 Wetlands

CEQA Significance: Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act?

All project alternatives would impact wetlands (Figure 3-3). Mitigation is proposed to ensure no net loss of wetland acreage (Appendix G); however, even with mitigation in place, the proposed project would contribute to cumulative impacts to wetlands (see Appendix F).

As discussed in Chapter 4 (Cumulative Impacts), Butte County is in the process of establishing a Habitat Conservation Plan, which would address cumulative impacts to special status species and habitat in the County. In addition, as part of the NEPA/404 coordination process for the proposed project, Caltrans is pursuing mitigation that would address impacts from this and other potential projects on SR 70 between Oroville and Sacramento. Specific details of mitigation measures are presented in Appendix G.

6.2 Impacts Mitigated to Less Than Significant

6.2.1 Biological Resources

CEQA Significance: Will the project have a substantial adverse effect, directly or through habitat modifications, on special status species?

Impacts to Swainson's hawk, Northwest pond turtles, Central Valley Chinook salmon and steelhead, and Valley Elderberry Longhorn Beetle would not be significant due to proposed mitigation and construction measures.

Oak Woodlands

CEQA Significance: *Would the project have a substantial adverse effect on any sensitive natural community identified in local or regional plans, policies or regulations or by the CDFG or USFWS?*

Mitigation for removal of oak specimen trees and oak woodland habitat would reduce impacts to these resources to a less than significant level. Construction measures would protect trees outside the work area.

6.2.2 Geology and Soils

CEQA Significance: *Would the project alter the existing drainage pattern in a manner that would result in substantial soil erosion or the loss of topsoil?*

Revegetation of the project area would reduce soil erosion impacts to a less than significant level.

6.2.3 Relocations

CEQA Significance: *Would the project displace substantial numbers of existing people, houses, or businesses?*

Compensation for displacement of houses and businesses in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, would reduce impacts to a less than significant level, and would be determined during the right-of-way negotiation phase of the project.

6.2.4 Water Quality

CEQA Significance: *Would the project substantially degrade water quality?*

There are no sensitive water resources, water supply reservoirs or high quality streams that would be affected by this project. Prior to the start of construction activities, a Storm Water Pollution Prevention Plan (SWPPP) would be required to outline construction Best Management Practices (BMP) to be used to minimize impacts on receiving waters. These plans would present detailed control measures to be followed such as sedimentation retention plans, materials handling and storage, spill prevention and erosion controls. These and other specific pollution control measures would be included in the project design specifications to limit erosion,

sedimentation and the release of chemicals to the water bodies. Implementation of these measures would ensure that the project would not result in significant impacts to water quality.

6.2.5 Other Impacts

CEQA Significance: *Would the project have a substantial adverse effect on a scenic vista?*

With the implementation of mitigation and construction measures, impacts to cultural resources, floodplains, and visual resources would not be significant.

6.3 Impacts Found Not Significant

6.3.1 Noise

Three residences at the SR 70/149 intersection would experience noise levels that exceed the NAC level of 67 dBA as a result of the proposed project. However, future noise levels for the No Build Alternative are predicted to be within 2 dBA of those for the preferred alternative. As discussed in Section 3.5.2, an increase of 2 dBA is not a perceptible difference. Noise impacts resulting from the project are not considered significant.

6.3.2 Other Impacts

The proposed project would have no significant impacts to farmland, hazardous waste sites, cultural resources, floodplains, land use or public services, and would actually have a beneficial impact to air quality and traffic due to decreased congestion. Direct growth impacts are not expected from the proposed project; the SR 149 improvements are designed for controlled access, and there are no planned developments within the project area that are linked to the proposed highway improvements.

Chapter 7 List of Preparers and Technical Reports

This Final Environmental Impact Statement/Environmental Impact Report (FEIS/FEIR) was prepared by the North Region of the California Department of Transportation (Caltrans). The following Caltrans staff contributed to this document:

7.1 Caltrans Contributors

Andrus, Mitch, Transportation Engineer, Range D. B.S. Civil Engineering, University of Southwestern Louisiana; 13 years at Caltrans, 10 years experience as project engineer. *Contribution: Project Engineer.*

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Contribution: *Biological Impact Calculations, Environmental Resource Mapping.*

Hibbert, James S. III, Landscape Associate. B.A. Geography, University of Alaska, Fairbanks; B.L.A. University of Oregon; 2 years of experience in Landscape Architecture.

Contribution: *Visual Impact Assessment Technical Report.*

Jones, Douglas, Senior Transportation Engineer. B.S. Civil Engineering, California State University, Chico; 18 years of experience in civil engineering.

Contribution: *Senior Design Engineer.*

Nelson, Krishnan, Associate Environmental Planner (Natural Science). B.S. Biological Sciences, California State University, Chico; 6 years of experience as fisheries biologist.

Contribution: *Revised NES (2002), Wetland Delineation update, Habitat Mitigation and Monitoring Proposal.*

Noble, Daryl, Associate Environmental Planner (Archaeology), B.S. Anthropology, California State University, Sacramento, M.A. Anthropology, California State University, Sacramento, 25 years experience in California Archaeology.

Contribution: *Archaeological surveys, HPSR review, Addendum to Finding of Effect.*

Offermann, Janis, Associate Environmental Planner (Archaeology). M.A.

Anthropology, University of California, Davis; 24 years of experience in California archaeology.

Contribution: *Archaeological surveys and Historic Property Survey Report.*

Phillips, Lesley, Landscape Associate. B.S. Landscape Architecture, University of California, Davis; 7 years experience Caltrans Bridge Structure Architecture, 4.5 years experience Landscape Architecture. ***Contribution: Visual Impact Assessment review***

Pommerenck, Keith, Civil Engineer. B.S. Environmental Resources, California State University, Sacramento; 16 years of experience preparing air, noise and energy studies. ***Contribution: Air and Noise Reports.***

Sannar, Dick, Associate Transportation Engineer (retired). Certificate in Hazardous Materials Management, California State University, Davis; 8 years of experience in hazardous waste studies, 22 years experience in water quality studies. ***Contribution: Hazardous Waste, Water Quality and Floodplain Risk Technical Report.***

Sauer, Scott, Transportation Planner. B.A. Government and Environmental Studies, California State University, Sacramento; 2 years of experience in transportation planning. ***Contribution: Growth Inducement Technical Report.***

Vaughan, Denise, Graphics and Website Design. B.A. Communications, California State University, Chico; 8 years experience in Graphic Design. ***Contribution: Document Graphics and Webpage design***

Wang, Litton, Transportation Engineer. M.S. Engineering Mechanics, University of Missouri, Rolla, B.S. Mine Construction, Beijing Institute of Mining & Technology; 2 years engineering experience at Caltrans. ***Contribution: Environmental Resource Mapping.***

7.2 Technical Reports

The following technical reports were prepared by Caltrans staff during development of the proposed project:

Air Quality Report

Alternatives Analysis

Floodplain Analysis

Growth Inducement Report

Habitat Mitigation and Monitoring Plan

Hazardous Waste Evaluation

Historic Property Survey Report

Noise Report

Natural Environment Study (Revised)

Project Study Report

Project Report

Visual Impact Assessment

Water Quality Report

Wetland Delineation

Chapter 8 Distribution List

In compliance with NEPA and CEQA, the public and agencies were notified of the availability of the Draft EIS/EIR. The Draft EIS/EIR availability was published in the Federal Register and in local newspapers. The notifications of were sent to all parties on the project mailing list.

The Draft EIS/EIR was distributed to key interested parties and key elected and appointed officials, as well as to all parties requesting it. The Draft EIS/EIR was available at the Chico Library, the Oroville Library, and through the Caltrans District 3 Public Information Office.

The following is a list of people and agencies receiving the Draft EIS/EIR:

Federal Agencies

U.S. Environmental Protection Agency
Region 9, EIS Coordinator
75 Hawthorne Street
San Francisco, CA 94105

National Marine Fisheries Services
Central Valley Office
650 Capitol Mall, Room 8-300
Sacramento, CA 95814

U.S. Army Corps of Engineers
Regulatory Branch
Sacramento District
1325 J Street
Sacramento, CA 95814

USDA – National Resources
Conservation Service
430 G Street, #4164
Davis, CA 95616-4164

U.S. Fish & Wildlife Service
2800 Cottage Way, Room W-2605
Sacramento, CA 95825

Mr. Steve Tuggle
U.S. Dept. of Energy, Western Area
Power Administration
Sierra Nevada Region
114 Parkshore Drive
Folsom, CA 95630

State Agencies

Office of Planning and Research
(State Clearinghouse)
P.O. Box 3044
Sacramento, CA 95812-3044

Ms. Kathleen Farren
Trust for Public Land
1107 9th Street, Suite 1050
Sacramento, CA 95814

Department of Conservation
801 K Street, MS 24-01
Sacramento, CA 95814

Calif. Dept. of Fish & Game
Fisheries, Wildlife & Environmental
Programs
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670

Calif. Dept. of Fish & Game
Habitat Conservation Planning Branch
1416 9th Street, Suite 1341
Sacramento, CA 95814

Office of Historic Preservation
P.O. Box 942896
Sacramento, CA 94296-0001

Dept. of Parks and Recreation
Resource Management Division
P.O. Box 942896
Sacramento, CA 94296-0001

DWR – Reclamation Board
1416 Ninth Street, Room 1601
Sacramento, CA 95814

Calif. Dept. of Water Resources
Environmental Services Office
3251 S Street, Room 111
Sacramento, CA 95816-7017

California Highway Patrol
Office of Special Projects
2555 1st Avenue
Sacramento, CA 95818

Calif. Dept. of Housing and
Community Development
Housing Policy Division
P.O. Box 952053
Sacramento, CA 94252-2053

Calif. Dept. of General Services
Environmental Services Section
1325 J Street, Suite 1910
Sacramento, CA 95814-2928

Calif. Air Resources Board
Transportation Projects
P.O. Box 2815
Sacramento, CA 95812

Integrated Waste Management Board
P.O. Box 4025
Sacramento, CA 95812-4025

State Water Resources Control Board
Division of Water Quality
P.O. Box 100
Sacramento, CA 95812

Department of Toxic Substances
Control
1000 I Street
Sacramento, CA 95812-2828

California Energy Commission
1516 Ninth Street, MS-29
Sacramento, CA 95814-5504

Native American Heritage
Commission
915 Capitol Mall, Room 364
Sacramento, CA 95814

Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

California State Lands Commission
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Sacramento, CA 95825-8202

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State Elected Officials

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Honorable Tim Leslie
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Butte County Public Works Director
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County Fire Chief
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Oroville, CA 95965

City of Chico
Community Development Dept.
P.O. Box 3420
Chico, CA 95927

Special Interest

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Oroville, CA 95966

Ms. Barbara Vlamis
Butte Environmental Council
116 West 2nd Street, Suite 3
Chico, CA 95928

California Wildlife Federation
1012 J Street, Suite 201
Sacramento, CA 95814

General Interest

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Santa Cruz, CA 95060
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Mr. Clayton Gunn
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Epic Homes
1263 Esplanade
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ATTN: Pete Giampaoli

California State University, Chico
400 W First Street
Chico, CA 95929
ATTN: Bill Jones – Library

Business Manager
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474 Valencia Street
San Francisco, CA 94103

Christensen & Schwarz, LLP
1 Governors Lane
Chico, CA 95926

Jack Miller
601 Locust St.
Redding, CA 96001

This FEIS/R will be sent to all persons, organizations, and agencies that submitted substantive comments on the DEIS/R, to all individuals who have requested a copy, and to all cooperating/responsible agencies.

This FEIS/R will also be available for information and public disclosure purposes at the following locations:

Chico Library
1108 Sherman Ave.
Chico, CA 95926

Oroville Library
1820 Mitchell Ave.
Oroville, CA 95965

Butte County Association of Governments
965 Fir Street
Chico, CA 95965

Caltrans District 3
703 B Street
Marysville, CA 95901

Chapter 9 References

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- CDFG 1994. California Department of Fish & Game. Staff Report on Swainson's hawk
- 40 CFR 1508.7. Code of Federal Regulations, Cumulative Impacts.
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- CDFG 1994. California Department of Fish & Game, Staff Report on Swainson's Hawk.
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Chapter 10 Index and Glossary

Index

A

accident rate, 1-5, 2-20, 3-68
agriculture, S-10, 3-76, 4-8, 4-10, 4-11
air quality, S-4, 3-8, 3-9, 4-10, 6-2, 6-6
archaeological resources, 2-2, 3-70, 3-71, 6-5

B

bats, 3-40, 3-44, 3-52
bicycle, 1-7, 2-3, 3-64, 3-66, 3-68
biological resources, S-5, 2-2, 4-3, 4-5, 4-10, 6-3
business, S-4, 2-2, 2-4, 3-6, 3-9, 3-10, 3-64, 3-65, 3-66, 6-5

C

capacity, 1-3, 1-7, 2-20, 3-57, 3-67, 3-75, 3-77, 4-5
carbon monoxide, vii, 3-5, 3-9
chinook salmon, S-5, 3-32, 3-38, 3-39, 3-49, 4-9, 6-2, 6-4
compensation, 3-18, 3-27, 3-49, 3-51, 3-67, 6-5
concurrence, S-11, 1-1, 1-8, 2-1, 3-70, 5-1, 5-2
congestion, S-1, 1-8, 3-66, 3-68, 3-78, 6-6
construction impacts, S-4, 3-9, 3-52
corridor, S-5, S-7, S-9, 1-3, 1-5, 1-6, 1-8, 2-2, 2-4, 2-10, 2-19, 3-2, 3-9, 3-20, 3-27, 3-37, 3-50, 3-57, 3-74, 3-76, 4-1, 4-3, 4-5, 4-7, 4-9
cost, i, 1-9, 1-10, 2-2, 2-3, 2-4, 2-6, 2-8, 2-10, 2-11, 2-13, 2-15, 3-12, 3-48, 3-76, 6-4
cultural resources, S-5, vii, S-5, 3-71, 3-72, 6-2, 6-5
cumulative impacts, S-5, S-7, S-10, 3-60, 4-1, 4-10, 6-2, 6-3
cumulative mitigation, S-5, 4-10

D

drainage, 1-7, 1-10, 2-13, 3-1, 3-2, 3-3, 3-4, 3-13, 3-14, 3-15, 3-16, 3-18, 3-23, 3-27, 3-39, 3-40, 3-43, 3-48, 3-51, 4-3, 4-9, 6-4

E

endangered species, S-5, S-6, S-11, vii, 3-28, 3-51, 4-9
environmental justice, 3-64
environmentally sensitive areas, S-6, 3-27, 3-50, 3-52
erosion, 3-1, 3-2, 3-4, 3-5, 3-23, 3-24, 3-26, 3-27, 3-42, 3-44, 3-50, 6-2, 6-4, 6-5

F

farmland, S-4, vii, 3-23, 3-59, 3-60, 4-10, 6-2, 6-6
fisheries, S-11, viii, 1-1, 3-19, 3-21, 3-24, 3-26, 3-36, 3-39, 4-3, 6-2
floodplain, S-4, 3-2, 3-3, 3-16, 3-23, 3-54, 3-55, 3-77, 4-11, 6-1, 6-1, 6-5

G

general plan, S-4, S-10, 3-57, 3-59, 3-76, 3-77, 4-3, 4-4, 4-5, 4-7, 4-8, 4-9, 6-4
groundwater, 3-5, 3-13, 3-14

growth, S-5, S-7, S-10, 2-4, 3-27, 3-39, 3-74, 3-75, 3-76, 3-77, 4-5, 4-8, 4-9, 4-10, 4-11, 6-2, 6-6

H

hazardous waste, S-5, 3-5, 6-2

historic property, vii, 3-70, 3-71, 5-3

housing, S-4, 3-76, 3-77

hydrology, 3-2, 3-13, 3-15, 3-44, 3-46, 3-54, 6-2

I

invasive species, 3-20, 3-23, 3-26

J

jurisdictional waters, 3-16, 3-18

L

land use, S-7, 3-10, 3-23, 3-57, 3-59, 3-74, 3-77, 3-78, 4-5, 4-10, 4-11, 6-2, 6-6

level of service, i, viii, 1-1, 1-3, 2-2, 4-5, 6-6

M

mitigation, i, S-4, S-6, S-7, S-10, 2-19, 3-1, 3-2, 3-4, 3-6, 3-9, 3-12, 3-13, 3-14, 3-16, 3-18, 3-19, 3-23, 3-25, 3-26, 3-28, 3-41, 3-43, 3-46, 3-48, 3-50, 3-51, 3-52, 3-53, 3-54, 3-57, 3-59, 3-70, 4-3, 4-4, 4-9, 4-10, 5-2, 6-2, 6-3, 6-4, 6-5

N

no build, i, S-3, S-4, S-5, 1-5, 2-1, 2-8, 2-11, 2-19, 2-20, 3-12, 3-13

noise, S-4, vii, 3-10, 3-12, 3-13, 6-1, 6-2, 6-4

O

oak woodlands, S-5, 3-20, 3-23, 3-25, 6-4

P

permits, S-9, S-11, 3-3, 3-4, 3-13

planned development, S-10, 4-11, 6-6

population, S-10, 3-64, 3-75, 3-76, 6-6

purpose and need, S-11, 1-1, 1-8, 1-9, 2-1, 2-2, 2-4, 2-11, 5-1, 5-2

R

rail, 2-3

receptors, S-4, 3-9, 3-12, 3-13

relocation, S-4, S-11, 2-4, 2-10, 3-6, 3-66, 3-67, 6-2, 6-5

residences, S-3, 2-2, 3-12, 3-57, 3-64, 3-65, 3-67, 6-4

riparian, S-5, S-6, 3-1, 3-2, 3-13, 3-14, 3-15, 3-18, 3-19, 3-20, 3-24, 3-25, 3-26, 3-27, 3-28, 3-31, 3-37, 3-39, 3-40, 3-42, 3-49, 3-50, 3-52, 3-55, 4-3, 4-8, 4-10

S

safety, S-1, 1-5, 1-7, 2-1, 2-3, 2-4, 2-6, 2-19, 3-59, 3-66, 3-67, 3-75, 3-76, 3-78, 4-5

salmon, S-5, 3-26, 3-32, 3-38, 3-39, 3-42, 3-43, 3-49, 3-54, 4-9, 6-2, 6-4

sedimentation, S-6, 3-1, 3-4, 3-14, 3-44, 3-50, 3-69

special status species, 3-13, 3-14, 3-28, 3-29, 3-40, 3-53, 3-54, 3-76, 3-78, 6-3, 6-4

steelhead, S-5, 3-31, 3-32, 3-39, 3-42, 3-49, 3-54, 4-5, 4-9, 6-2, 6-4
storm water, 3-3, 3-4, 3-5
summary, S-1, S-4, 3-45, 3-53, 3-54, 4-10, 5-1
system linkage, 1-6, 2-20

T

technical studies, S-1, D-1
traffic, S-1, 1-1, 1-3, 1-5, 1-7, 1-8, 2-3, 2-8, 2-15, 2-19, 2-20, 3-10, 3-12, 3-59, 3-66, 3-67, 3-68, 3-74, 3-75, 6-6
transit, 1-7, 2-3, 3-68

U

underground storage tanks, 3-5

V

valley elderberry longhorn beetle, S-5, viii, 3-32, 3-39, 3-43, 3-50, 4-4, 4-5, 4-8, 4-10, 4-11, 6-4
vegetation, 3-1, 3-2, 3-4, 3-5, 3-13, 3-15, 3-16, 3-19, 3-20, 3-23, 3-24, 3-27, 3-28, 3-30, 3-32, 3-37, 3-41, 3-44, 3-49, 3-50, 3-52, 3-55, 3-69, 3-70, 3-77, 6-2
vernal pool fairy / tadpole shrimp, 3-32, 3-40, 3-43, 3-44, 3-49, 3-51, 6-3
vernal pools, S-5, S-6, S-7, 3-13, 3-14, 3-16, 3-17, 3-20, 3-31, 3-32, 3-34, 3-38, 3-40, 3-42, 3-43, 3-44, 3-45, 3-52, 3-69, 4-4, 4-7, 4-8, 4-10 6-3
visual, S-5, 3-19, 3-52, 3-69, 3-70, 3-77, 4-10, 6-2, 6-5

W

water quality, S-4, S-6, S-11, 3-2, 3-3, 3-4, 3-5, 3-26, 4-10, 6-2, 6-5, D-1
wetlands, i, S-4, S-5, S-6, S-7, 2-2, 2-6, 2-8, 3-13, 3-14, 3-15, 3-16, 3-18, 3-30, 3-40, 3-43, 3-69, 3-77, 4-3, 4-4, 4-5, 4-10, 6-2, 6-3
wildlife, S-6, S-10, 3-3, 3-14, 3-15, 3-19, 3-20, 3-21, 3-24, 3-26, 3-27, 3-28, 3-77, 4-4, 4-8, 4-9, 4-11, 6-2

Glossary

Accident rate – Number of accidents per million vehicles.

ACOE – U.S. Army Corps of Engineers

Aggregate Base – A layer of rock material immediately below the pavement.

Anadromous - Migrating up rivers from the sea to breed in fresh water.

Best Management Practices (BMP) – Any program, technology, process, operating method, measure or device that controls, prevents, removes or reduces pollution.

Basin Plan – A specific plan for control of water quality within one of the nine hydrologic basins of the State under the regulation of a Water Quality Control Board.

Bypass – An arterial highway that permits traffic to avoid all or part of a certain area such as an urban area or park.

Caltrans – California Department of Transportation

CDFG – California Department of Fish and Game

CEQA – California Environmental Quality Act of 1970

CNDDDB – California Natural Diversity Data Base; a database of plant and animal species

CNPS – California Native Plant Society

Conventional Highway – A highway with no control of access roads onto the highway, which may or may not be divided or have grade separations at interchanges.

Cooperating Agency – An agency, other than the lead agency, that has jurisdiction by law or other expertise, that is involved in a proposed project.

Corridor – A strip of land between two termini within which traffic, topography, environment, and other characteristics are evaluated for transportation purposes.

CTC – California Transportation Commission

Cumulative Effects – Project effects that are related to other actions with individually insignificant but cumulatively significant impacts.

dBA – Decibels on the A-weighted scale.

DBH – Diameter (of a tree) measured at breast height.

Decibel – A numerical expression of the relative loudness of a sound.

Dense Grade Asphalt Concrete (DGAC) – Densely compacted asphalt concrete pavement

Draft EIS/EIR – Draft Environmental Impact Statement (federal), Environmental Impact Report (State).

Drainage basin – The area in which all surface water will accumulate into one given stream.

Encroachment (floodplain) – An action within the limits of the 100-year floodplain.

Endangered – Plant or animal species that are in danger of extinction throughout all or a significant portion of its range.

Erosion – The wearing away of the land surface by running water, wind, ice, or other geological agents.

ESU – Evolutionarily Significant Unit – A distinctive group of Pacific salmon, steelhead, or sea-run cutthroat trout.

Expressway – Arterial highway with at least partial control of access, where limits are placed on number and type of intersecting streets, roads and driveways. An expressway may or may not be divided or have separations at intersections.

FEMA – Federal Emergency Management Agency

FHWA – Federal Highway Administration

Federal Register – A federal publication that provides official notice of federal administrative hearings and issuance of proposed and final federal administrative rules and regulations.

Finished Grade – Finished surface elevation of a roadway

FIRM – Flood Insurance Rate Map. The official map upon which FEMA has delineated the areas of special flood hazard applicable to a community.

Floodplain (100-year) – The area subject to flooding by the flood or tide having a one-percent chance of being exceeded in any given year.

Freeway – A divided arterial highway with full control of access and with grade separations at intersections.

Grade Separation – Utilized when two roads intersect at different grades (vertical elevations). Normally provided as part of an interchange, in lieu of an at-grade intersection.

Habitat – The place or type of site where a plant or animal naturally or normally lives and grows.

Hectare – A unit of surface measure in the metric system, equal to 10,000 square meters.

Hinge Point – Point of the graded roadway shoulder at which the slope tapers off, typically 3 ft beyond the edge of the paved shoulder

HPSR – Historic Property Survey Report. A comprehensive evaluation of cultural resources in a given area.

Initial Site Assessment – A Caltrans term for an initial study to determine hazardous waste issues on a project.

LEDPA – Least Environmentally Damaging Practicable Alternative. The Clean Water Act Section 404(b)(1) Alternatives Analysis is a specific evaluation to determine the LEDPA to waters of the U.S. (including wetlands) while meeting the project purpose. A Section 404 Permit can only be issued for the LEDPA.

L_{eq} – A measurement for evaluation of sound impacts, it is the measurement of the fluctuating sound level received by a receptor averaged over a time interval (usually one hour).

Level of Service (LOS) – A measurement of capacity of a roadway.

M - (meters)

Median – The area of a divided highway that separates the traveled way for traffic in opposite directions.

Mitigation – Compensation for an impact by replacement or providing substitute resources or environments. Mitigation can include avoiding an impact by not taking a certain action, minimizing impacts by limiting the degree of an action, or rectifying an impact by repairing or restoring the affected environment.

NEPA – National Environmental Policy Act of 1969

NEPA/404 Integration Process- Integration of NEPA and Section 404 of the Clean Water Act, for projects that require a NEPA action and an Individual Permit under Section 404.

NES – Natural Environment Study (biology)

NMFS – National Marine Fisheries Service

NOD – Notice of Determination. A decision statement that indicates that a project has been approved subject to the requirements of CEQA.

NOI – Notice of Intent, part of the NEPA process. A notice placed in the Federal Register to advise the public that an environmental impact statement will be prepared for a project.

NOP – Notice of Preparation, part of the CEQA process. Notice sent to responsible agencies stating that an environmental impact report will be prepared for a project.

NPDES – National Pollutant Discharge Elimination System. A permit regulated by the Regional Water Quality Control Board that is required if more than 2 ha (5 ac) of original ground is graded. One condition of this permit is that the contractor submit a Storm Water Pollution Prevention Plan (SWPPP), which is similar to the Water Pollution Control Plan required by Caltrans' Standard Specification 7-1.01G.

Open Grade Asphalt Concrete – Pervious layer of asphalt concrete pavement, placed over the layer of dense grade asphalt concrete

Postmile (PM) – A method of identifying a location on the State Highway System using miles. When combined with the county and route, identifies unique locations along any State route in terms of miles.

Practicable – An action that is capable of being done after taking into consideration cost, existing technology and logistics in light of overall project purposes.

Profile Grade – Finished surface elevation of a roadway, typically from a view down the centerline

Receptors – Term used in air quality and noise studies that refers to houses or businesses that could be affected by a project.

Regulatory Agency – An agency that has jurisdiction by law.

Responsible Agency – A public agency other than the Lead Agency that has responsibility for carrying out or approving a project under CEQA.

Right-of-Way – A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to transportation purposes.

Riparian – Pertaining to the banks and other adjacent terrestrial (as opposed to aquatic) environs of freshwater bodies, watercourses, estuaries, and surface-emergent aquifers, whose transported freshwater provides soil moisture sufficient in excess of that available through local precipitation to potentially support the growth of vegetation.

ROD – Record of Decision, part of the NEPA process. A statement that explains why an alternative has been selected, and summarizes mitigation and efforts made to minimize environmental impacts.

RTP – Regional Transportation Plan.

RWQCB – Regional Water Quality Control Board.

SHPO – State Historic Preservation Officer.

Special Status Species – Plant or animal species that are either (1) federally listed, proposed for or a candidate for listing as threatened or endangered; (2) bird species

protected under the federal Migratory Bird Treaty Act; (3) protected under State endangered species laws and regulations, plant protection laws and regulations, Fish and Game codes, or species of special concern listings and policies; (4) recognized by national, state, or local environmental organizations (e.g., California Native Plant Society).

STIP – State Transportation Improvement Program.

SWPPP – Storm Water Pollution Prevention Plan.

Threatened – species that is likely to become endangered in the foreseeable future in the absence of special protection.

TIP – Transportation Improvement Program.

TSM – Transportation Systems Management.

Underground Storage Tanks (USTs) – Tanks that typically contain motor vehicle fuel and are placed approximately three feet below the ground surface.

USACOE – U.S. Army Corps of Engineers.

USEPA – U.S. Environmental Protection Agency.

USFWS – United States Fish and Wildlife Service.

Waters of the United States – As defined by the USACOE in 33 CFR 328.3(a):

1. All waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce, including any such waters:
 - (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
 - (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - (iii) Which are used or could be used for industrial purposes by industries in interstate commerce;
4. All impoundment of waters otherwise defined as waters of the United States under this definition;
5. Tributaries of waters identified in paragraphs 1-4;
6. The territorial seas;
7. Wetlands adjacent to waters (waters that are not wetlands themselves) identified in paragraphs 1-6.

Wetlands – Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas [33 CFR 328.3(b)].

Appendices

The following appendices that contain information supporting the DEIS/DEIR have been removed from the FEIS/FEIR:

- Appendix B Notice of Intent, Notice of Preparation
- Appendix C Title VI Policy
- Appendix D Technical Studies
- Appendix E Draft NEPA/404 Alternatives Analysis
- Appendix F Summary of Mitigation and Monitoring Commitments

The following new appendices of information relevant to the FEIS/FEIR have been added:

- Appendix B Comments Received on DEIS/DEIR
- Appendix C NEPA/404 Concurrence Letters
- Appendix D U.S. Fish and Wildlife Service Biological Opinion; NMFS Concurrence
- Appendix E Final NEPA/404(b)(1) Alternatives Analysis
- Appendix F Wetlands Only Practicable Alternative Finding
- Appendix G Summary of Mitigation and Monitoring Commitments
- Appendix H USFWS Species List
- Appendix I Relocation Assistance Advisory Service

Appendix A Coordination and Consultation

1. Design Change
2. Williamson Act Notification
3. State Historic Preservation Office (SHPO) Letters
4. USFWS Coordination for Special Status Species
5. USACOE Wetland Delineation verification

DEPARTMENT OF TRANSPORTATION

DISTRICT 3
P.O. BOX 911
MARYSVILLE, CA 95901
TDD Telephone (916) 741-4509
FAX (530) 741-4457
Telephone (530) 741-4498



March 5, 2001

File: 03-But-70/149/99

KP Various

PM Various

EA 382200

Ms. Elizabeth Varnhagen
USEPA, Region 9
CMD-2
75 Hawthorne Street
San Francisco, CA 94105

Subject: Design change for Table Mt. Blvd. on Caltrans' SR 70/149/99 Highway
Improvement Project in Butte County, Between Chico and Oroville

Dear Ms. Varnhagen:

Caltrans has made a design change to the above referenced highway improvement project in Butte County. This change involves the alignment of SR 70 and Table Mt. Blvd. north of SR 149. The original design included extending Table Mt. Blvd. from its intersection with SR 70 (just north of the SR 70/149 intersection) north through the Berkeley Olive Association Historic District to SR 191. The Historic District is eligible for inclusion on the National Register of Historic Places, and therefore subject to considerations under Section 4(f) of the Department of Transportation Act. It has been determined through consultation with the Federal Highway Administration that a change in design is preferable to impacting the Historic District as originally proposed.

As shown on the enclosed exhibit, the project will now include the following:

- SR 70 will be realigned to the west of its current location, from the proposed SR 70/149 interchange to the SR 70/191 intersection.
- Table Mt. Blvd. will be extended north to join existing SR 70. This will become a frontage road, and will tie-in to SR 70 at the SR 191 intersection.

This design change will eliminate impacts to the Berkeley Olive Association Historic District. While this will slightly increase the impacts to oak woodlands, impacts to mixed riparian wetlands will be decreased.

The Draft Initial Study/Environmental Assessment will be available for review and comment within the next few months, and will reflect this design change. We look forward to further coordination with your agency. If you have any questions, please contact Monica Finn at (530) 682-6294, or Carolyn Rech at (916) 274-5824.

Sincerely,

Original Signed by

JEAN L. BAKER, Chief
Environmental Management, M-2 Branch

Attachment

cc: RC Slovensky, FHWA
Michael Aceituno, NMFS
Tom Cavanaugh, USACOE
Chris Nagano, USFWS
Jerry Bielfeldt, USFWS

DEPARTMENT OF TRANSPORTATION

DISTRICT 3

P.O. BOX 911

MARYSVILLE, CA 95901

TDD Telephone (916) 741-4509

FAX (530) 741-4457

Telephone (530) 741-4598

February 1, 2000

03-But-70/149/99

PM 20.48/0.0-4.6/21.81

EA 382200

Darryl Young, Director
Department of Conservation
801 K Street, MS 24-01
Sacramento, CA 95814

Dear Mr. Young:

In accordance with Government Code Section 51291(b), this letter is to serve as notification of the possible acquisition of Williamson Act contracted land for a proposed highway improvement project in Butte County. The project will upgrade State Route 149 to a 4-lane expressway, and construct interchanges at the existing State Route 70/149 and 99/149 intersections. The purpose of the project is to improve safety at the existing SR 70/149 and SR 99/149 intersections, provide concept level of service C for the year 2020, and provide an interregional facility between Oroville and Chico.

The following attachments are included for your information:

- Project vicinity and location maps
- Butte County Conservation Agreement map, showing prime and non-prime Williamson Act designated parcels
- Williamson Act parcel acquisition spreadsheet, listing the amount of land proposed for acquisition
- Copies of Williamson Act contracts

As can be seen from the maps, right of way acquisition will be in the form of strips of land adjacent to the existing highway, and areas needed for the construction of interchanges and frontage roads.

Of the 28 Williamson Act parcels possibly affected by this project, contracts are attached for 5 of the parcels. Contracts for the remaining parcels were not available.

The total proposed acquisition of Williamson Act contracted land is approximately 195 acres, 9.5 acres of which are designated as prime agricultural land. The remaining area surrounding the project is also agriculturally zoned as primarily grazing and open land (with 40-acre minimum parcel sizes).

As to the explanation of preliminary consideration of Section 51292, this is a state highway project determined to be exempt from this requirement in Section 51293. In accordance with Section 51291(e) of the Government Code, notices and findings regarding Williamson Act parcels will also be contained within a CEQA document to be prepared by this office.

If your office has not contacted us within 30 days, we will assume you have no comments or concerns regarding this proposed acquisition. Please contact Sue Bauer at (530) 741-7113 if you have any questions.

Sincerely,

Original signed by

JEAN L. BAKER, Chief
Office of Environmental Management, M-2

Attachments

OPTIONAL FORM 99 (7-90)

STATE OF CALIFORNIA - THE RESOURCES AGENCY

FAX TRANSMITTAL

1 of pages = 2

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-8624 Fax: (916) 653-9824
cshp@post@mail2.qwiknet.com

Janis Offermann Dist. 03 Environment (916) 741-4457	George Wishman (916) 498-5056 (916) 498-5008
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NON 7540 01 317 7368 5089-101 GENERAL SERVICES ADMINISTRATION

MARCH 7, 2000

REPLY TO: FHWA000207A

David A. Nicol, Acting Division Administrator
Federal Highway Administration
California Division
980 Ninth Street, Suite 400
SACRAMENTO CA 95814-2724

Re: Widening of State Route 149 and the Construction of Interchanges at the Junction of Routes 149/70 and 149/99 north of Oroville, Butte County.

Dear Mr. Nicol:

Thank you for submitting to our office your February 3, 2000 letter and Historic Property Survey Report (HPSR) for the proposed widening of State Route (SR) 149 and the construction of interchanges at the Junction of SRs 149/70 and 149/99 north of Oroville in Butte County. The undertaking is designed to address problems encountered by drivers making the transition from the four-lane highways on Routes 70 and 99 to the existing two-lane highway on SR149. The accident rate at the junction of Routes 70 and 149 is currently eight times higher than the state average while the fatal accident rate at the junction of Routes 99 and 149 is 17 higher than the state average. The Area of Potential Effect (APE) for the undertaking, as described in the HPSR, is adequate and appears to meet the definition set forth in 36 CFR 800.16(d).

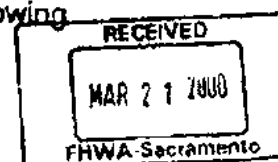
The Federal Highway Administration (FHWA) is seeking our comments on its determination of the eligibility of properties located within, or adjacent to, the project APE, for inclusion on the National Register of Historic Places (NRHP) in accordance with 36 CFR 800, regulations effective June 17, 1999 implementing Section 106 of the National Historic Preservation Act. These properties include the following:

- CA-BUT-1277H (the Wick Ranch)
- Gold Run Creek Homestead
- Dry Creek Tailings
- A segment of the Cherokee Mine Levee
- A World War II Practice Field
- The Berkeley Olive Association complex
- A Berkeley Olive Association Camp
- 15 bridge structures
- 20 pre and post-1954 structures

Our review of the submitted documentation leads us to concur with FHWA's determination that the following property is eligible for inclusion on the NRHP, at the level of local significance, under Criterion A as defined in 36 CFR 60.4:

- The Berkeley Olive Association Historic District which includes the following contributing structures:

- Headquarters (Bldg. #4 - Barn; Bldgs. #5 and #6 - Sheds)



- North Camp (Bldgs. 7A - 7I)
- Red Stucco Residence (Bldg. 8) and wood-clad garage (Bldg. 9)
- Stone Houses (Bldgs. #10 and Building #11)
- "Camp 1" (Bldgs. #17, #18, #19, #20, and #21)
- "Camp 2" (Bldgs. #22, #23, #24, #25, #26, and #27)

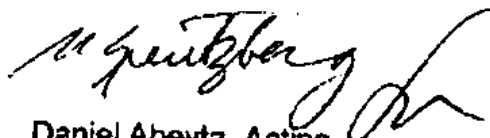
All of the aforementioned structures have strong associations with the development of the ripe olive industry in the Oroville area, and are surviving early examples of an olive growing culture that was one of the largest in the nation in the early 20th century.

We also concur with FHWA's determination that the 15 bridge structures and the remaining 20 pre and post-1954 structures are not eligible for inclusion on the NRHP under any of the criteria established by 36 CFR 60.4. The structures have no strong associations with significant historical events or persons, and are not examples of outstanding engineering design or function. The remaining aforementioned properties noted in the HPSR are currently undergoing further evaluation for significance and eligibility for the NRHP. Our comments on the eligibility of these properties will be forthcoming pending receipt by our office of a completed package of additional documentation.

FHWA is also seeking our comments on its preliminary determination of the effects the proposed undertaking will have on historic properties in accordance with 36 CFR 800. The fact that all of the properties listed in the HPSR have not been completely evaluated, leaves us to conclude that comments regarding the effects of the proposed project on these properties would not be appropriate given the lack of information on their historic significance. This is especially true of FHWA's assessment of the unknown potential effects of the project on the World War II Practice Field and the Berkeley Olive Association Camp. To what extent are these properties affected by the undertaking given their potential historic eligibility status? Also, is the information submitted in the HPSR regarding the Gold Run Homestead, the Dry Creek Tailings, and the Cherokee Mine Levee truly sufficient for the FHWA to forward a preliminary determination of no effect for this undertaking? Is there the potential that additional information gathered during the still uncompleted evaluation might change this preliminary finding of effect?

Thank you again for seeking our comments on your project. If you have any questions, please contact staff historian Clarence Caesar at (916) 653-8902.

Sincerely,



Daniel Abeyta, Acting
State Historic Preservation Officer

**OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION**

P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@mail2.quiknet.com



September 20, 2000

REPLY TO: FHWA000207A

Michael G. Ritchie, Acting Division Administrator
Federal Highway Administration
California Division
980 Ninth Street, Suite 400
SACRAMENTO CA 95814-2724

Re: Widening of State Route 149 and the Construction of Interchanges at the Junction
of Routes 149/70 and 149/99 north of Oroville, Butte County.

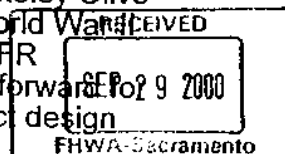
Dear Mr. Ritchie:

Thank you for submitting to our office your August 21, 2000 letter and Determination of Eligibility/Finding of Effect (DOE/FOE) documentation regarding the proposed widening of State Route 149 and the construction of interchanges at the junctions of State Routes (SR) 149/70 and 149/99 north of the City of Oroville in Butte County. The undertaking is designed to address problems encountered by drivers making the transition from the four-lane highways on Routes 70 and 99 to the existing two-lane highway on SR149. The accident rate at the junction of Routes 70 and 149 is currently eight times higher than the state average while the fatal accident rate at the junction of Routes 99 and 149 is 17 higher than the state average. In our letter of March 7, 2000, we stated that the Area of Potential Effect (APE) for the undertaking, as described in the previous HPSR, was adequate and appeared to meet the definition set forth in 36 CFR 800.16(d). The APE for this report was amended to include modifications required to accommodate an alternative that widens SR 149 entirely on the north side of the existing highway. We have no objection to the amended APE for this alternative.

In our March 7, 2000 letter we concurred with the Federal Highway Administration's (FHWA) determination that:

- The Berkeley Olive Association Historic District, a property located within the boundaries of the APE, was eligible for inclusion on the National Register of Historic Places (NRHP) under Criterion A as defined by 36 CFR 60.4.
- The 15 bridge structures and remaining 20 pre and post-1954 structures were not eligible for inclusion on the NRHP under any of the criteria established by 36 CFR 60.4.

We were unable to comment on the finding of effects for the project at that time due to insufficient information on the historical significance of the properties being effected by the project. The properties included the Berkeley Olive Association Camp, the World War II Practice Field, the Gold Run Creek Homestead, the Dry Creek Tailings, and the Cherokee Mine Levee. It appears that most of the requested information has been forwarded in the current DOE/FOE documentation. We note however that FHWA has offered a determination of effect only for the Berkeley Olive Association Historic District, the Berkeley Olive Association Camp, the World War II Practice Field, and the Gold Run Creek Homestead site pursuant to 36 CFR 800.4(d)(1) and 36 CFR 800.16(l). No determinations of effect were put forward for the Dry Creek Tailings and the Cherokee Mine Levee due to recent project design modifications.



FHWA is seeking our comments on its determination of the eligibility of the Berkeley Olive Association Camp and the World War II Practice Field, two properties located within the project APE, for inclusion on the NRHP in accordance with 36 CFR 800, regulations implementing Section 106 of the National Historic Preservation Act. FHWA is also seeking our comments on its determination of the effects the proposed project will have on historic properties in accordance with 36 CFR 800. Our review of the submitted DOE/FOE documentation leads us to concur with FHWA on the following:

- The Berkeley Olive Association Camp and the World War II Practice Field are not eligible for inclusion on the NRHP under any of the criteria established by 36 CFR 60.4. The properties have no strong associations with significant historical events or persons, and are not examples of outstanding engineering design or function or significant cultural landscapes.
- All of the proposed alternatives for this project will have an adverse effect on Berkeley Olive Association Historic District. We will provide comments on your enclosed Memorandum of Agreement (MOA) addressing the effects of the proposed project in a timely manner.

We are still unable to render comments on the proposed project's potential effects on the Gold Run Creek Homestead site due to the fact that FHWA has not forwarded their decision on a preferred alternative for this project. The alternatives under consideration have the property located within or outside their respective APE's thus making it difficult to render comments based on actual eventualities. FHWA must forward a preferred alternative for this project and a finding of effect representative of the project's impacts on the Gold Run Creek Homestead. Upon receipt, we will comment on FHWA's finding of effect for the preferred project alternative. Please inform us if the preferred alternative also has the potential to affect the Dry Creek Tailings and Cherokee Mine Levee sites as well.

Thank you for seeking our comments regarding your project. If you have any questions, please contact staff historian Clarence Caesar at (916) 653-8902.

Sincerely,



Daniel Abeyta, Acting
State Historic Preservation Officer

**OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION**

P.O. BOX 942896
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(916) 653-6624 Fax (916) 653-9824
calshpo@mail2.quiknet.com



June 11, 2001

REPLY TO: FHWA010418A

Michael G. Ritchie, Division Administrator
Federal Highway Administration
Region Nine, California Division
980 Ninth Street, Suite 400
SACRAMENTO CA 95814-2724

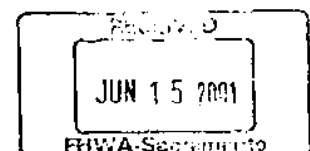
Re: Design Modifications to the State Route 70/149/99 Interchange Construction
Project, Butte County.

Dear Mr. Ritchie:

Thank you for submitting to our office your April 16, 2001 letter and Revised Finding of Effect (RFOE) regarding proposed modifications to the State Route (SR) 70/SR 149/SR 99 widening project in Butte County. The proposed project will widen SR 149 north of the City of Oroville, Butte County from two to four lanes and will add interchanges at the junctions with SR 70 and SR 99. SR 70 will also be widened to four lanes from its junction with SR 149 to the junction of SR 191. Our office responded to the original Historic Property Survey Report (HPSR) in our letter of March 7, 2000. In that letter, we concurred with the delineation of the Area of Potential Effects (APE) and with the Federal Highway Administration's determination that the Berkeley Olive Association Historic District was eligible for inclusion on the National Register of Historic Places (NRHP). In our letter of September 20, 2000 we determined that the Berkeley Olive Association Camp and the World War II Practice Field were ineligible for inclusion on the NRHP and that the proposed project, as then described, would have an adverse effect on the Berkeley Olive Association Historic District.

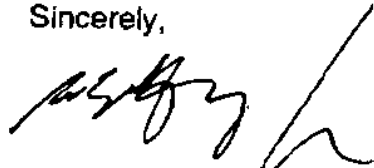
FHWA has explored alternatives that would avoid the use of lands in the Berkeley Olive Association Historic District for purposes of the proposed project. As a result, FHWA has revised the project design, whereby the existing State Route 70 adjacent to the Historic District would be converted to a frontage road, and the new four-lane section of SR 70 would be re-located to the west of the existing alignment. The revised APE for this project appears adequate and meets the definition set forth in 36 CFR 800.16(d).

FHWA is seeking our comments on its effects on the Berkeley Olive Historic District in accordance with 36 CFR 800, regulations implementing Section 106 of the National Historic Preservation Act. Our review of the RFOE leads us to concur with FHWA's determination that the proposed project, as described, will have no effect on the Berkeley Olive Association Historic District. We commend FHWA on its efforts to avoid adverse impacts to historic properties on this project.



Thank you again for seeking our comments on your project. If you have any questions, please contact staff historian Clarence Caesar at (916) 653-8902.

Sincerely,

A handwritten signature in black ink, appearing to read 'Knox Mellon', with a long, sweeping horizontal stroke extending to the right.

Dr. Knox Mellon
State Historic Preservation Officer

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION

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caishpo@ohp.parks.ca.gov
www.ohp.parks.ca.gov



January 13, 2003

Gary N. Hamby, Division Administrator
California Division
Federal Highway Administration
980 Ninth Street, Suite 400
Sacramento, CA 95814-2724
Attn: Brian Zewe

Reply To: FHWA000207A

Re: 03-BUT-70/149/99 03226-382200 Addendum to the Finding of Effect
for the Proposed Widening of SR 149 and Construction of Inter-
Changes at SRs 149/99 and 149/70 North of Oroville, Butte County, CA

Dear Mr. Hamby:

On December 30, 2002, I received from FHWA the subject addendum to the previously submitted Finding of Effect and Revised Finding of Effect prepared for the undertaking cited above. The current submittal continues the Section 106 consultation process for this undertaking that was initiated by FHWA in February of 2000.

FHWA has now selected a project alternative for construction and has delineated an APE for this alternative. The following properties, identified during previous phases of our consultation, are now located outside the undertaking's APE and therefore do not require further consideration: Gold Run Creek Homestead, Dry Creek Tailings, and Cherokee Mine Levee.

In addition, the APE delineated for the selected construction alternative excludes properties previously determined through consensus to be eligible for inclusion in the National Register. Accordingly, FHWA has found pursuant to 36 CFR § 800.4(d)(1), that the undertaking as now proposed will have no effect on historic properties.

Having considered all of the documentation, determinations and findings submitted by FHWA for my comment regarding this undertaking, I have concluded that FHWA has complied satisfactorily with the requirements of § 800.4(a) through (c), inclusive, and I therefore do not object to the FHWA finding made pursuant to § 800.4(d)(1), that no historic properties will be affected by this undertaking.

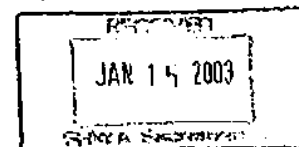
I recognize and commend the efforts made by FHWA and the California Department of Transportation to develop and implement an undertaking that avoids effects to historic properties.

If you have any questions, please contact Hans Kreutzberg, Supervisor, Cultural Resources Program, State Office of Historic Preservation.

Sincerely,



Dr. Knox Mellon
State Historic Preservation Officer



DEPARTMENT OF TRANSPORTATION

DISTRICT 3
P.O. BOX 911
MARYSVILLE, CA 95901
TDD Telephone (916) 741-4509
FAX (530) 741-4457
Telephone (530) 741-4499



October 17, 2000

03-BUT 149/99/70
SR 149 Improvements
Between SR 70 & 99
03-382200

Mr. Wayne White, Field Supervisor
U.S. Fish and Wildlife Service
Endangered Species Branch
2800 Cottage Way
Sacramento, CA 95825

Attn: Chris Nagano

Subject: Request for Informal Consultation for Caltrans SR 99/149/70
Improvement Project in Butte County, between Oroville and Chico.

Dear Mr. Nagano:

The California Department of Transportation (Caltrans) in conjunction with the Federal Highway Administration is proposing a highway improvement project on State Route (SR) 149 in Butte County, California. SR 149 is located southeast of Chico and northwest of Oroville. This project proposes to widen the existing two-lane highway to a four-lane expressway and construct new interchanges at SR 149/70 and SR 149/99. The NEPA/404 Integration Process was initiated in March 1999 and concurrence to purpose, need, criteria and range of alternatives was received in September 1999.

Attached is a copy of the 404(b)(1) Alternatives Analysis and Natural Environment Study Report. With the transmittal of these documents, Caltrans would like to initiate informal consultation and obtain your agency's input. Caltrans anticipates circulation of the environmental document in November 2000, and holding a multi-agency meeting to identify the Least Environmentally Damaging Practicable Alternative (LEDPA) in December 2000.

Please review the attached information and provide Caltrans with any comments. If you have any questions, please contact project biologist Monica Finn at (530) 740-4814 or at Monica_Finn@dot.ca.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Chris Collison". The signature is fluid and cursive, with the first name "Chris" and last name "Collison" clearly distinguishable.

Chris Collison, Chief
Office of Biological Studies
Caltrans District 3

Attachments

CC:

Jerry Bielfeldt, USFWS

Larry Vinzant, USACOE

Kelly Finn, NMFS

David Tomsovic, EPA

Kathleen A. Dadey, EPA



DEPARTMENT OF TRANSPORTATION

DISTRICT 3
P.O. BOX 911
MARYSVILLE, CA 95901
TDD Telephone (916) 741-4509
FAX (530) 741-4457
Telephone (530) 741-4498

October 17, 2000

03-BUT 149/99/70
SR 149 Improvements
Between SR 70 & 99
03-382200

Mr. Michael Aceituno, Team Leader
Central Valley, National Marine Fisheries Services
650 Capitol Mall, Suite 6070
Sacramento, CA 95814

Attn: Kelly Finn

Subject: Request for Informal Consultation for Caltrans SR 99/149/70
Improvement Project in Butte County, between Oroville and Chico.

Dear Mr. Aceituno:

The California Department of Transportation (Caltrans) in conjunction with the Federal Highway Administration proposes a highway improvement project on State Route (SR) 149 in Butte County, California. SR 149 is located southeast of Chico and northwest of Oroville. This project proposes to widen the existing two-lane highway to a four-lane expressway and construct new interchanges at SR 149/70 and SR 149/99. The NEPA/404 Integration Process was initiated in March 1999 and concurrence to purpose, need, criteria and range of alternatives was received in September 1999.

Attached is a copy of the 404(b)(1) Alternatives Analysis and Natural Environment Study Report. With the transmittal of these documents, Caltrans would like to initiate informal consultation and obtain your agency's input. Caltrans anticipates circulation of the environmental document in November 2000, and holding a multi-agency meeting to identify the Least Environmentally Damaging Practicable Alternative (LEDPA) in December 2000.

Please review the attached information and provide Caltrans with any comments. If you have any questions, please contact project biologist Monica Finn at (530) 740-4814 or at Monica_Finn@dot.ca.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Chris Collison". The signature is fluid and cursive, with the first name "Chris" and last name "Collison" clearly distinguishable.

Chris Collison, Chief
Office of Biological Studies
Caltrans District 3

Attachments

CC:

Chris Nagano, USFWS
Jerry Bielfeldt, USFWS
Larry Vinzant, USACOE
David Tomsovic, EPA
Kathleen A. Dadey, EPA



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922
February 21, 2002

Regulatory Branch (199700165)

Jean Baker
California Department of Transportation
P.O. Box 911
Marysville, California 95901

Dear Ms. Baker:

This letter concerns the delineation of waters of the United States, including wetlands, dated November 26, 2001 for the Butte 70/99/149/191 project, submitted to this office for verification. The project area is located within Butte County, California.

Based on a site inspection conducted by Tom Cavanaugh of this office, we concur with the estimate of waters of the United States, as depicted on the "Study Area For the Butte 70/99/149/191 Project, dated November 8, 2001. Approximately 118.35 acres of waters of the United States, including wetlands, exist within the "Widen South" alternative. Approximately 121.60 acres of waters of the United States, including wetlands, exist within the "Widen North" alternative. Approximately 117.97 acres of waters of the United States, including wetlands, exist within the "Avoid Butte County Meadowfoam" alternative. These areas are regulated by this office under Section 404 of the Clean Water Act since they are tributary to tributaries of the Sacramento River.

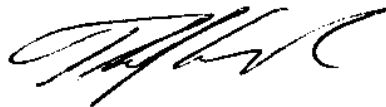
Under Section 404 of the Clean Water Act, a Department of the Army (DA) permit is required prior to discharging dredged or fill materials into waters of the United States. The type of permit required will depend on a number of factors, including the type and amount of waters affected by the discharge. For more information on how to obtain a DA permit from our office, please visit our website at <http://www.spk.usace.army.mil/cespk-co/regulatory/>.

Please note that any disclaimer of jurisdiction made in this letter is only for Section 404 of the Federal Clean Water Act. Other Federal, State, and local laws may apply to those areas where we disclaimed jurisdiction. In particular, a proposed discharge into one of these areas may still be regulated by the California State Water Resources Board. As such, you may need to submit a Report of Waste Discharge to the appropriate Regional Water Quality Board.

This verification is valid for five years from the date of this letter unless new information warrants revision of the determination before the expiration date. A notice of appeal options is enclosed.

Please refer to identification number 199700165 in future correspondence concerning this project. If you have any questions, please write to Tom Cavanaugh, Room 1480 at the letterhead address, or telephone (916)557-5261.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tom Cavanaugh', with a stylized flourish at the end.

Tom Cavanaugh
Chief, Sacramento Valley Office

Enclosure

Copies Furnished w/o enclosure:

Mr. Oscar Balaguer, Chief, Water Quality Certification Unit, California State Water Resources
Control Board, 1001 I Street, Sacramento, California 95814



NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant:	File Number: 199700165	Date: February 21, 2002
Attached is:	See Section below	
<input type="checkbox"/>	INITIAL PROFFERED PERMIT (STANDARD PERMIT OR LETTER OF PERMISSION)	A
<input type="checkbox"/>	PROFFERED PERMIT (STANDARD PERMIT OR LETTER OF PERMISSION)	B
<input type="checkbox"/>	PERMIT DENIAL	C
<input checked="" type="checkbox"/>	APPROVED JURISDICTIONAL DETERMINATION	D
<input type="checkbox"/>	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I: The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://usace.army.mil/inet/functions/cw/cccw/reg> or Corps Regulations 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the **District Engineer** for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the **District Engineer**. The **District Engineer** must receive your objections within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the **District Engineer** will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the **District Engineer** will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the **District Engineer** for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the **Division (not District) Engineer** (address on reverse). The **Division Engineer** must receive this form within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the **Division (not District) Engineer** (address on reverse). The **Division Engineer** must receive this form within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the **Division (not District) Engineer**. The **Division Engineer** must receive this form within 60 days of the date of this notice. Exception: JD appeals based on new information must be submitted to the **District Engineer** within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further information. Also, you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL OR OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: (The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.)

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

District Engineer

US Army Corps of Engineers, Sacramento District, CESPK-CO-R

ATTN: Regulatory Branch, Thomas Cavanaugh

1325 J Street, Sacramento, CA 95814-2922 (916-557-5250)

(Use this address for submittals to the District Engineer)

If you only have questions regarding the appeal process you may also contact:

Division Engineer

US Army Corps of Engineers, South Pacific Division, CESPD-CM-O

ATTN: Doug Pomeroy, Administrative Appeal Review Officer

333 Market Street, San Francisco, CA 94105 (415-977-8035)

(Use this address for submittals to the Division Engineer.)

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Date

Telephone Number

Signature of Appellant or Agent

Appendix B Comments Received on Draft EIS/EIR

This appendix contains comments received on the DEIS/DEIR. A copy of each letter, or public comment card is reproduced, followed by the responses to substantive issues raised. The portions of each comment requiring a response have been marked with brackets and numbered to correspond to the responses. Letters have been grouped in the following categories:

- Federal Agencies
- State Agencies
- Local Agencies
- Individuals



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

July 30, 2002

Maiser Khaled
Federal Highway Administration
980 Ninth Street, Suite 400
Sacramento, CA 95814-2724

Dear Mr. Khaled:

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the **Butte 70/149/99/191 Highway Improvement Project**, Butte County, California (CEQ Number: 020229, ERP Number: FHW-K40251-CA). Our review is pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR §1500-1508), and Section 309 of the Clean Air Act.

The Federal Highway Administration (FHWA) and California Department of Transportation (Caltrans) propose to upgrade State Route (SR) 149 to a four-lane expressway and construct freeway-to-freeway interchanges at the SR 70/149 and SR 99/149 intersections. Other improvements include realignment of SR 70 between SR 149 and SR 191, rehabilitation of the existing SR 149 roadway, reconstruction of the SR 70/191 interchange, and construction of driveway access and county roads, including a portion of Shippee Road, Table Mountain Boulevard, and Book Farm Road.

The project would begin at the proposed SR 70/149 interchange and end at the proposed SR 99/149 interchange, a distance of 4.6 miles. The purpose of the project is to improve traffic safety, maintain a Level of Service (LOS) C through the year 2020, and provide a continuous four-lane interregional transportation system between Ororville and Chico. The DEIS includes three build alternatives and a no-build alternative.

On October 8, 1999, EPA, a signatory agency to the NEPA/Clean Water Act Section 404 Integration Process Memorandum of Understanding (NEPA/404 MOU), concurred with the purpose and need, criteria for selection of alternatives, and the range of alternatives for the project. EPA also reviewed and commented on the SR 70/149/99 Initial Study/Environmental Assessment (IS/EA) in a letter dated June 15, 2001. Due to anticipated impacts to wetlands, EPA recommended the preparation of an EIS. We commend FHWA's decision to prepare an EIS.

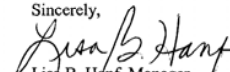
EPA appreciates the opportunity we have had to discuss our questions and concerns about the DEIS with Caltrans staff. However, after reviewing the DEIS, we continue to have major concerns about: 1) the cumulative impacts analysis; 2) impacts to waters of the U.S.; 3) induced growth; and 4) air quality. Our detailed comments are attached.

Based on our concerns, we have rated the document *Environmental Concerns-Insufficient Information (EC-2)*. This rating applies to all the build alternatives. Please see the attached *Rating Factors* for a description of EPA's rating system.

Following public review of the DEIS, the next step in the NEPA/404 MOU process is for FHWA/Caltrans to identify and seek concurrence from the signatory agencies on the least environmentally damaging practicable alternative (LEDPA) and the conceptual mitigation plan and implementation schedule. Concurrence should be sought prior to issuance of the Final EIS.

When the Final EIS is completed, please send us two copies at the address above (mail code: CMD-2) at the same time it is filed with EPA's Washington, D.C. office. If you have any questions, please feel free to contact me or Nancy Levin, the point of contact for this project. Nancy can be reached at 415-972-3848 or levin.nancy@epa.gov.

Sincerely,


Lisa B. Hanf, Manager
Federal Activities Office

Attachments: Summary of EPA Rating Definitions
Detailed Comments

cc: Jean L. Baker, Caltrans District 3
Tom Cavanaugh, U.S. Army Corps of Engineers
Jerry Bielfeldt, U.S. Fish and Wildlife Service
Michael Aceituno, U.S. National Marine Fisheries Service

SUMMARY OF EPA RATING DEFINITIONS

This rating system was developed as a means to summarize EPA's level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the EIS.

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

ADEQUACY OF THE IMPACT STATEMENT

Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, "Policy and Procedures for the Review of Federal Actions Impacting the Environment."

Cumulative Impacts

The Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA) define a cumulative impact as "...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR §1508.7).

The purpose of a cumulative impacts analysis is to help decision makers and the public understand the rate and magnitude of losses to environmental resources of concern over time, and within an appropriate geographical scope. A cumulative impacts analysis of environmental impacts allows for more informed environmental planning and management.

EPA supports Caltrans' identification of the corridor from Sacramento to Chico as the cumulative impacts study area (CISA). The cumulative impacts analysis in the Draft Environmental Impact Statement (DEIS), however, is incomplete. It does not take into account impacts from all major Caltrans projects and major development activities in the CISA. More information is needed on cumulative impacts to resources of concern, including: 1) wetlands and waters of the U.S.; 2) threatened and endangered species and their habitat; and 3) agricultural resources. The cumulative impacts analysis in the Supplementary DEIS for the I-880/SR 92 Interchange project (Caltrans District 4) may be a good reference for the type of information useful in a comprehensive cumulative impacts analysis.

EPA recognizes that an analysis of cumulative impacts to resources of concern can be difficult and complex. Since a cumulative impacts analysis is required by the CEQ regulations implementing NEPA, and since the Sacramento to Chico corridor includes numerous Caltrans projects, EPA would like to suggest that the cumulative impacts analysis for the SR 149 project, once complete, can be used for other projects in the corridor.

Recommendations

- Discuss the past, present, and reasonably foreseeable impacts on resources of concern. Choose a baseline from which these impacts are measured. Analyze the rate of loss and magnitude (size and relative importance) of impacts to these resources.
- Include all major Caltrans projects in the cumulative impacts analysis (and in Tables 4.1, 4.2 and 4.3). Include projects that were not carried forward in the analysis from the Environmental Assessment (EA, Table 3), such as the Third Crossing of the Feather River, SR 70/Algonon (formerly Motorplex) Interchange, and Upgrade of State Route (SR) 99 south of Yuba City projects.
- Include major development projects (in addition to those listed in Table 4.1) that could impact resources of concern, such as the South Sutter Yuba Industrial Park, the high

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Recommendations

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- Include major development projects (in addition to those listed in Table 4.1) that could impact resources of concern, such as the South Sutter Yuba Industrial Park, the high 3

school/development project in Chico, development in Oroville, and the Casino on Ophir Road. Quantitative information on impacts should be readily available in project Environmental Impact Reports, and is useful for cumulative analysis. 3

- Given that the Lincoln Bypass and other projects on SR 65 have significant impacts on vernal pools, it is reasonable to include these projects in the cumulative impacts analysis. Also, the inclusion of SR 65 projects in the Caltrans Growth Inducement Report (June 2000) covering the SR 70 Sacramento to Chico Corridor suggests that SR 65 projects should be included in the cumulative impacts analysis for the corridor. 4
- The Beale Airforce Base is adjacent to the CISA boundary and is a site for future development (airport expansion, training facilities, residential, hospital, landfills, munitions storage) that will have environmental impacts, particularly to vernal pools. Given the potential growth and resource impacts, EPA suggests that this area be included in the CISA. 5
- Discuss the issues of habitat fragmentation and loss of wetland functions as a result of transportation improvements and changing development patterns. Clarify whether fragmentation and loss of functions are captured in the numbers presented in Tables 4.2 and 4.3. Estimates of impacts of the Marysville Bypass should be included in Tables 4.2 and 4.3. 6
- A separate project, "Clear Creek Bridge" project, is proceeding in the SR 149 project study area in order to correct structural footings damaged by long-term degradation and scour (page 1-7). The impacts of this project should be included in the cumulative impacts analysis. 7
- In order to analyze the cumulative impacts to resources of concern from development projects, it is important to have current information on city and county plans and major development projects. This information includes when the general plan was updated, size (acreage and units) of the major development projects, mitigation plans (acreage and location) and parties responsible for mitigation, expected completion dates for major projects, and the potential for unplanned growth. 8
- The DEIS states that a Butte Habitat Conservation Plan (HCP) is forthcoming. Please provide information on the status of and area covered by the Butte HCP. Describe how this HCP will: 1) help conserve highly threatened resources of concern and 2) address the potential for induced growth from this and other projects in the Butte county. 9
- Discuss specific steps that are being taken by the cities and counties to protect agricultural land. Describe any specific policies in the general and specific plans to protect agricultural resources. 10

Waters of the United States

The numbers of acres of impacts to vernal pool and swale habitat in Table 4-2 and Table S-1 appear to be inconsistent. Table 4-2 estimates that the SR 149 project will have 6.49 acres of direct and indirect impacts on vernal pools and swales. Table S-1 lists direct impacts to vernal pool and swale habitat as 6.5 to 8.23 acres, depending on the alternative chosen. In addition, the impacts in Table S-1

do not include the indirect impacts to vernal pool and swale habitat.

Figure 3-3 (sheet 2 of 2) lists impacts to fairy and tadpole shrimp habitat as considerably higher than the acreages of vernal pools and swales. The Final EIS (FEIS) should clarify the methodology used to determine that shrimp habitat is greater than vernal pool and swale habitat.

Recommendations

- Clarify any inconsistencies in wetlands numbers cited in the paragraphs above. 11
- Include indirect impacts to vernal pool and swale habitat in Table S-1. 12
- Address the extent of habitat fragmentation, loss of wetland functions adjacent to the alignment, and impacts to hydrology that affect wetlands, in the context of reasonably foreseeable development. 13
- Design the facility to avoid and minimize impacts to resources to the extent practicable by minimizing the median strip and footprint. 14

Induced Growth

The DEIS states that future development in the Sacramento to Chico corridor "would occur regardless of capacity additions to the State Highway System (SHS)." The implication of this statement is that the freeway and expressway upgrades in the corridor have no bearing on the location, rate, and type of development. EPA recommends that this statement be substantiated, since research sponsored by the American Association of State Highway and Transportation Officials in cooperation with the Federal Highway Administration, and numerous studies specific to California, show that transportation improvements can, in fact, significantly affect the location, pattern, and pace of development.¹

Changes in development patterns tend to affect the amount of vehicle miles traveled (VMT), which can affect mobile-source emissions. Increased development in more rural areas will probably result in greater VMT due to longer travel distances.

FHWA has recognized that the corridor improvements "may increase capacity and make travel in the region quicker..." Traffic models consistently show that increases in speed are likely to encourage more VMT. Increases in VMT can lead to increases in mobile-source emissions, including air toxics, as well as increases in polluted stormwater runoff. Increases in speeds increase nitrogen oxide (NOx) emissions, and can also contribute to increases in volatile organic compounds (VOCs) and particulates.

Recommendations

- Clearly state how the proposed project may affect the location, pattern, pace, and type of residential, commercial, and industrial development in the region. 15

¹Land Use Impacts of Transportation: A Guidebook, Transportation Research Board, National Research Council, Project 8-32(3), May 1998.

- Describe the potential environmental impacts from induced growth and increased VMT from the SR 149 project, identify opportunities to mitigate for those impacts, and suggest which parties would be most appropriate to provide mitigation.

Air Quality

Butte County is designated a non-attainment area for the one-hour ozone standard under the National Ambient Air Quality Standards (NAAQS) regulated under the Federal Clean Air Act. Because the new eight-hour ozone standard is more stringent than the one-hour standard, it is likely that Butte County will also be in non-attainment for the new eight-hour ozone standard once attainment areas are designated. The new eight-hour standard may have bearing on the project as it develops. Therefore, it would be useful, and appropriate under the public disclosure requirements of NEPA, to include in the FEIS a discussion of the implications of the new eight-hour ozone standard with respect to the project.

The area has experienced exceedances of particulate matter less than 2.5 microns in diameter (PM 2.5). These are likely to be exacerbated by NOx increases, VOC increases and direct PM 2.5 from re-entrained dust. EPA is aware of the serious health effects that "fine" particulates can cause, as reflected in EPA's new standard for PM 2.5. While EPA has not yet designated non-attainment areas for PM 2.5, EPA recommends that the FEIS include a discussion of the implications of the new PM 2.5 standard with respect to the project. EPA also urges FHWA and Caltrans to reduce particulate emissions to the greatest extent possible.

The project is in a conforming Federal Transportation Improvement Plan (FTIP) dated September 2000. Since the FTIP is renewed every two years, the FEIS should indicate that the same project is included in the most current FTIP and Regional Transportation Plan (RTP) in any future NEPA documents.

Recommendations

- Include in the FEIS discussions of the new eight-hour ozone and PM 2.5 standards. To the extent that monitoring data are available on these two criteria pollutants, include that information in the FEIS. 16
- Identify sensitive receptors in the project area, such as children, elderly, infirm, and athletes, and schedule construction to minimize impact to these populations. 17
- Specify the duration and concentration of air emissions by pollutant and location for each phase of project construction. 18
- Reduce the use of diesel-powered equipment in construction. Include mitigation measures that detail how diesel emissions will be minimized for each phase of project construction. 19
- Demonstrate that the project is part of the most current FTIP and RTP, and conforms to the State Implementation Plan (SIP). 20

Other Comments

The project involves the realignment of Shippee Road and abandonment of existing road. The FEIS should include a discussion of the future jurisdiction and uses of the abandoned section of existing road.

21

The California Land Conservation (Williamson) Act of 1965 gives landowners preferential tax treatment for land that is kept in agriculture or open space. The SR 149 project will require Caltrans to acquire land that is currently under Williamson Act contracts. The DEIS states that the acquisition of Williamson Act contracts requires no mitigation. Please provide additional information to explain why no mitigation is required for Caltrans' acquisition of these protected lands.

22

The EPA is incorrectly identified as a cooperating agency for this project on the front page of the DEIS. This should be corrected in the FEIS.

23

**Response to Comments from
United States Environmental Protection Agency, Region 9**

Cumulative Impacts

1. Resources of concern for the cumulative impact analysis are wetlands (including vernal pools and swales), special status vernal pool shrimp species, and Butte County Meadowfoam (indirect impacts). Past actions that have caused impacts in the project area include those related to agricultural practices, grazing of livestock, and the reconstruction of SR 149 in 1975. Currently, ongoing agricultural practices and livestock grazing are impacting the resources of concern. The ongoing operation of existing SR 149 has not eliminated wetland resources, or special status vernal pool species. Reasonably foreseeable future actions in the project area that could impact the resources of concern are continued agricultural practices and livestock grazing, and the construction of the proposed project. There is also the possibility of a casino development project near the SR 99/149 intersection. Currently, the Mechoopda Indian Tribe is attempting to place 400 acres into Trust through the Bureau of Indian Affairs. No timeline for a project proposal is currently available.
2. The Third Feather River Bridge project has not been included in the cumulative effects evaluation as it would not impact similar resources to those found in the SR 149 project area. The SR 70/Algodon Road Interchange project has been included in the cumulative evaluation, as it is on the SR 70 corridor and would have vernal pool impacts. Project information has been added to Tables 4-1, 4-2. Since this project would not impact VELB, no additional information has been added to Table 4-3. The SR 99 widening south of Yuba City has not been included in the cumulative analysis since it would not have impacts to similar resources found in the SR 149 project area, and is not on the SR 70 corridor.
3. The South Sutter/Yuba Industrial Park, located along SR 99 near the Sacramento County line, has not been included in the cumulative analysis as it is far removed from the SR 149 project area, and does not contain similar resources. The new high school project in Chico has not been included as a site has not been chosen, and it is not possible to speculate on project impacts. According to the Butte County Association of Governments (BCAG), no development projects are currently proposed in and around the Oroville/Chico area, and there is no new casino project on Ophir Road.
4. The SR 65 Lincoln Bypass project was not included in the cumulative effects evaluation as it is not located along the SR 70 corridor and is far removed from the SR 149 project area.
5. Beale Airforce Base was not included in the cumulative effects evaluation as it is not located along the SR 70 corridor.

6. The proposed project could contribute to habitat fragmentation for vernal pool species. Although there would be no direct impact to Butte County Meadowfoam, indirect impacts of approximately 0.21 ha (0.53 ac) could occur. The project would directly impact approximately 11.87 ha (29.33 ac), and indirectly impact 6.88 ha (17.0 ac) of vernal pool fairy and tadpole shrimp habitat. Impacts would be minimized and mitigated through implementation of reasonable and prudent measures outlined in the U.S. Fish & Wildlife Service Biological Opinion for the proposed project. Travel corridors for wildlife would be maintained throughout the project area. The proposed project would maintain all current hydrological connections. Wetland functions would only be impacted in areas where placement of fill occurs. Proposed mitigation would result in “no net loss” of wetlands and vernal pool fairy and tadpole shrimp habitat. Impacts to plant community, wildlife, and wetland functions would be offset through preservation of existing high quality habitats, creation of new habitats, and restoration of degraded habitats.
7. The Clear Creek Bridge scour repair has been completed. This was a minor project that will not contribute to cumulative impacts to resources in the project area.
8. Butte County is currently undertaking the General Plan update, and has hired a consultant to help with the process. The update will take approximately 2 years.
9. BCAG will be sending out a Request for Proposals for the HCP development at the end of November 2003.
10. Current zoning restrictions and General Plan policies are in place to protect agricultural lands.

Wetlands

11. In Table 4-2, estimated impacts to vernal pools and swales were based on Alternative 3. The Estimated Impact column was incorrectly labeled as representing direct + indirect impacts; this has been changed to read temporary + permanent impacts, consistent with Table S-1. The impact estimate for the SR 149 project in Table 4-2 has been rounded up from 6.49 ac to 6.5 ac, to match the corresponding number for Alternative 3 in Table S-1 (temp. + perm.).
12. Impacts to habitat for endangered vernal pool species were assessed as being either direct or indirect. Impacts to vernal pools, a Clean Water Act Section 404 wetland resource, were assessed as being either permanent or temporary. In Table S-1, Vernal Pool & Swale “habitat” has been changed to read Vernal Pools and Swales for clarification.
13. There is no reasonably foreseeable development adjacent to the proposed project in the areas that would have impacts to wetlands. Areas containing wetland resources for the preferred alternative are shown in Figure 2-6; Butte County has not identified any development projects in these locations.

14. Median width has already been reduced from the standard 22 m (72 ft) to a minimum 18.6 m (60 ft), thus reducing the project footprint.

Induced Growth

15. Infrastructure for development does not currently exist along the SR 149 corridor. Butte County has identified preservation of agricultural land as a priority for the County (Butte County General Plan). The majority of land bordering the proposed project is zoned for agricultural uses. While the County can approve changes in zoning, the stated desire (General Plan) to direct development toward existing urbanized areas whose infrastructure can support or be expanded to support development indicates that land in and around the project area is not a major target for development.

The pace and type of residential, commercial and industrial development is difficult to predict, and is dependent on many factors including economic conditions in the County. The population in Butte County is predicted to increase by somewhere around 44% by the year 2020 (BCAG) regardless of transportation improvements. The proposed project would improve traffic circulation to and from Oroville and Chico and may accommodate growth in these areas.

Butte County is planning for growth to occur in the greater Oroville and Chico urbanized areas. Development projects would be responsible for mitigating their own environmental impacts, which could include any number of areas in the social, economic, or natural environment. Traffic predictions indicate that SR 149 will experience an increase in Average Daily Traffic (ADT) of approximately 150% by the year 2020 (Table 1-2). One objective of the proposed project is to increase the capacity of the roadway to accommodate this increase in traffic. If capacity is not increased, congestion will lead to increased safety and operational concerns. Environmental impacts that would result from the proposed SR 149 improvement project have been presented in the FEIS/R, and Caltrans and the FHWA have outlined appropriate mitigation for those impacts (Section S.4, Summary of Proposed Mitigation).

Air Quality

16. The USEPA has proposed new eight-hour ozone and PM 2.5 standards, but they have been held up in recent court actions. Attainment/non-attainment areas have not been designated for the new standards, but current areas of non-attainment will probably continue as such with the more stringent standard. PM 2.5 data is being reported for a number of monitoring stations in the project area. The monitoring data (which is available on the Air Resources Board website) does show concentrations of PM 2.5 in the area.

Regional air quality analysis is contained in the Regional Transportation Plan (RTP) and the Transportation Improvement Program (TIP). When a transportation project is included in a conforming RTP or TIP, as is the proposed project, then the additional emissions from the project are accounted for and no further analysis is required.

17. The proposed project is located in a rural area with a low density of receptors. No concentrations of sensitive receptors have been identified within the project limits.
18. During the construction phase of the project, the contractor would be required to comply with the Caltrans Standard Specifications and the Butte County Air Quality Management District (BCAQMD) regulations. BCAQMD has a Fugitive Dust Emission Rule (Rule 207) that specifies that dust emissions must be controlled. The Rule does not require Caltrans to quantify air emissions by pollutant and location for each phase of the project.
19. The Air Resources Board has classified Diesel Particulate Matter as a Toxic Air Contaminant. The Board has promulgated Risk Reduction Plans to address diesel emissions. At this time, there is no method to quantify and mitigate diesel emissions. Therefore, construction equipment must comply with all local regulations and the Caltrans Standard Specifications and must meet applicable emission standards.
20. According to BCAG, the proposed project is in the most current (2002) FTIP and Butte County's 2001 RTP, and conforms to the SIP.

Other Comments

21. Butte County would take jurisdiction over the new section of the Shippee Road realignment and would abandon the old alignment, which would likely be deeded to existing property owners for access to their property.
22. State highway projects are generally exempt under Section 51293 from the provisions of the Williamson Act. Therefore, no mitigation is required.
23. This correction has been made.

**Response to Comments from
United States Department of Energy, Western Area Power Administration**

Jeannie Baker
07/19/2002 06:46 AM
To: Sue Bauer/D03/Caltrans/CAGov@DOT
cc:
Subject: Draft EIS/EIR Comments

Comments from WAPA regarding their right of way.

----- Forwarded by Jeannie Baker/D03/Caltrans/CAGov on 07/19/2002 06:45 AM -----



"Steve Tuggle"
<TUGGLE@wapa.gov>
07/18/2002 05:58 PM

To: <jeannie_baker@dot.ca.gov>
cc: "Bruce Thomas" <BTHOMAS@wapa.gov>, "Chuck Cooper" <COOPER@wapa.gov>, "Geoff Buchholz" <GBUCHHOL@wapa.gov>, "Heidi Miller" <HMILLER@wapa.gov>, "Ross McFate" <MCFATE@wapa.gov>, "Scott Hicks" <SHICKS@wapa.gov>
Subject: Draft EIS/EIR Comments

Appreciate the opportunity to comment on the Butte 70/149/99/191 Highway Improvement Project. These comments are centered around Western Area Power Administration's (Western) Transmission Line that will be relocated due to the proposed highway improvements.

On page 3-5 of the document states mitigation and BMP practices that would be implemented. What BMP's will be required of Western's linemen for the relocation of Western's Cottonwood-Roseville Transmission Line?

1

On page 3-18 the document states mitigation for impacts associated with the proposed project. Western would like to illustrate that since line reliability must be preserved through operation and maintenance practices, no on-site mitigation within Western's Right-of-Way (ROW) should take place.

2

On page 3-25 and 3-26 the document discusses mitigation through on-site and off-site mitigation. In addition, the document also states oak trees to be avoided will be marked in the field and identified as ESA's. Again, Western would like to clarify that since line reliability must be preserved through operation and maintenance practices, no on-site mitigation within Western's ROW's should take place. Also, vegetation that has the potential for encroaching into the minimum clearance distance (18 feet from the point of maximum sag - WAPA Order 6460.1) should be evaluated for removal prior to establishing a new transmission line footprint. Vegetation over 12 feet in height interferes with the safe operation and maintenance of the transmission line.

3

4

On page 3-65 and 3-67 the document discusses two of Western Area Power Administration's towers are present on the west side of SR 70 north of SR 149. It is Western's understanding that more than two Transmission Line towers will be affected or relocated. This document should clarify the proposed project impacts on utility relocations and also address any impacts and/or mitigations associated with these relocations.

5

Steve Tuggle
Environmental Protection Specialist
114 Parkshore Drive
Folsom, California 95630-4710
(916) 353-4549 office
(916) 804-9721 cell
(916) 985-1936 fax
tuggle@wapa.gov

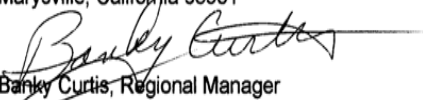
1. No Best Management Practices (BMPs) would be required of Western Area Power Administration (WAPA) linemen.
2. No mitigation would take place within WAPA right-of-way.
3. Same as #2.
4. Vegetation that would interfere with operation and maintenance of transmission lines would be removed.
5. Two Western Area Power Administration (WAPA) towers are present on the west side and one on the east side of SR 70, north of SR 149. The two WAPA towers on the west side would be eliminated, and would be replaced by three towers. One additional tower would be constructed on the east side of SR 70. This work is necessary to accommodate the realignment of SR 70 and construction of the SR 70/149 interchange. Impacts associated with this work would consist of removal of existing vegetation, and would be addressed as necessary under Caltrans' Standard Best Management Practices for erosion control and water quality. This text has been added in Sections 3.12.1 through 3.12.3.

Memorandum



To: Ms. Jean L. Baker, Chief
Environmental Management M-2
California Department of Transportation (Caltrans)
Post Office Box 911
Marysville, California 95901

Date: July 17, 2002

From: 
Banky Curtis, Regional Manager
Central Sierra-Central Valley Region
Department of Fish and Game
1701 Nimbus Road, Rancho Cordova, California 95670

Subject: Comments on the Draft Environmental Impact Statement/Report (DEIS/R) for State Route 70/149/99/191 Highway Improvement Project in Butte County, California (State Clearinghouse No. 2001052061)

The Department of Fish and Game (Department) has reviewed the subject May 2002 DEIS/R for a Highway Improvement Project between Oroville and Chico in Butte County, California. The proposed project will widen 4.6 miles of SR 149 from a two-lane highway to a four-lane expressway and construct freeway-to-freeway interchanges at both the SR 70/149 and 99/149 intersections. In addition, the project proposes to realign SR 70 between SRs 149 and 191, rehabilitate the existing SR 149 roadway, reconstruct the SR 70/191 intersection, construct driveway access roads, and reconstruct a portion of three county roads including Shippee Road, Table Mountain Road, and Book Farm Road.

The proposed project is an integral element of the SR 70/149/99 Sacramento to Chico corridor improvement plan which will connect Chico and Oroville with the Marysville/Yuba City area, and the State freeway system. Other elements of the plan include the "Highway 70 Extension Project" at Oroville and the "Marysville Bypass Project."

The Department is providing comments on the DEIS/R as both a responsible and trustee agency. As trustee for the State's fish and wildlife resources, the Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of such species. In this capacity, the Department administers the California Endangered Species Act (CESA), the Native Plant Protection Act (NPPA), and other provisions of the California Fish and Game Code that afford protection to the State's fish and wildlife public trust resources.

Appendix C NEPA/404 Concurrence Letters

1. Purpose and need, criteria for selection of alternatives, range of alternatives
2. Least Environmentally Damaging Practicable Alternative (LEDPA)
3. Conceptual Habitat Mitigation and Monitoring Proposal (HMMP)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

October 8, 1999

Chris Collison, Chief
Office of Biological Services
ATTN: Monica Finn, Biologist
Caltrans District 3
PO Box 911
Marysville, California 95901

Dear Mr. Collison:

The U.S. Environmental Protection Agency has reviewed the materials submitted by Caltrans to us on September 1, 1999 via electronic mail regarding the State Route 149/99/70 Project between Oroville and Chico in Butte County, California. In addition to materials prepared by Caltrans, Monica Finn of your office provided EPA with a copy of letters submitted by the U.S. Fish and Wildlife Service (FWS) and the Army Corps of Engineers (Corps) dated September 3, 1999 and September 9, 1999, respectively. Caltrans requests EPA's written concurrence on the following aspects of the project's environmental documentation under the NEPA-404 Memorandum of Understanding: project purpose and need; criteria for selection of alternatives; and range of alternatives to be included in the State Route 149 Widening Project environmental document. The materials indicate that, as of this date, Caltrans and the Federal Highway Administration (FHWA) intend to prepare an Environmental Assessment, which would be used to determine if a Finding of No Significant Impact (FONSI) is appropriate or whether an Environmental Impact Statement is warranted.

Based upon the documentation provided to EPA, we agree to concur with the project purpose and need, criteria for selection of alternatives, and range of alternatives to be presented in the environmental document. We are, however, supportive of the positions expressed by the FWS and the Army Corps in their September 1999 letters to Caltrans regarding an expansion of the range of alternatives to be examined in the environmental document. We acknowledge the statement of Monica Finn (October 8, 1999 phone conversation with EPA) that any reference to "interchanges" in the action alternatives presented in Caltrans' September 1, 1999 documentation should be deleted, as interchanges are no longer part of the proposed project. Finally, we urge Caltrans and FHWA to work closely with the Corps, the FWS, EPA, the California Department of Fish and Game and other agencies to secure the best possible information about whether a Federal EIS may be an appropriate vehicle, should unavoidable impacts to vernal pools, wetlands and other aquatic resources protected under Section 404 of the Federal Clean Water Act prove to be a major source of concern.

October 8, 1999

We appreciate the opportunity to comment on the project pursuant to the NEPA-404 Memorandum of Understanding between our agencies. We look forward to working with Caltrans and FHWA as the environmental document is prepared and submitted for public review, and as Caltrans proceeds to the next stage in the NEPA-404 process. If you have any questions, please call me at 415-744-1575.

Sincerely,

A handwritten signature in black ink, appearing to read "David Tomsovic", with a horizontal line drawn underneath the name.

David Tomsovic
Federal Activities Office
Cross-Media Division

cc: John Hoole, FHWA, Sacramento
Mark Littlefield, FWS, Sacramento
Michael Finan, Corps, Sacramento



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

September 9, 1999

Regulatory Branch (199700165)

Jean L. Baker
Chief, Office of Environmental Technical Studies
CALTRANS, District 3
P.O. Box 911
Marysville, California 95901

Dear Ms. Baker:

I am responding to your request, on behalf of Caltrans and the Federal Highway Administration, for Corps of Engineers' concurrence for the State Route (SR) 149/99/70 project. This highway improvement project is proposed to be constructed between existing freeways/expressways on SR 70 and SR 99 between Oroville and Chico, in Butte County, California. This response is pursuant to the 1994 Memorandum of Understanding on the Integration of the National Environmental Policy Act (NEPA) and Clean Water Act Section 404 procedures for Surface Transportation Projects.

We have reviewed the revised NEPA project purpose, need, criteria for the selection of project alternatives and range of alternatives to be included in the draft environmental assessment (EA) as stated in the September 1, 1999, transmittal from Monica Finn in your office. We concur with these, provided two additional Highway Gap Closure on Existing SR 149 alternatives are added; one which involves upgrading existing SR 149 to four-lane expressway or freeway, with freeway to freeway interchanges at SR 70 and SR 99 and closing existing driveways, with no frontage road construction, and an alternative which is the same as above, but with a local interchange at Shippee Road. Both of these should include the 3 variations, north only, south only and Butte County Meadowfoam avoidance, being studied along SR 149.

The Corps of Engineers jurisdiction within the study areas is under the authority of Section 404 of the Clean Water Act for the discharge of dredged or fill material into waters of the United States. Waters of the United States include, but are not limited to, perennial, intermittent or ephemeral streams, lakes, ponds, and wetlands such as marshes, vernal pools, wet meadows, and seeps. Projects that involve discharges of fill material into waters of the United States require prior Department of the Army authorization.

If it is determined that an Environmental Impact Statement (EIS) is necessary for this project, we will serve as a cooperating agency in developing the EIS, as a federal agency with permitting authority over portions of the project. The range of alternatives considered in an EA or EIS should include alternatives to filling waters of the United States, including wetlands. Every effort should be made to avoid project features which require the discharge of dredged or fill material in waters of the United States. In the event it can be clearly demonstrated there are no practicable alternatives to filling waters of the United States, mitigation plans should be developed to compensate for the losses resulting from the project.

Thank you for your cooperation. Please provide us with notice of any scoping meetings, wetland delineation report(s) for the proposed alternatives and draft EA and/or EIS for the project, when they are available, for our review and comment. If you have any questions, please write to Michael Finan, Room 1444, or telephone (916) 557-5324. We appreciate the opportunity to be included in your review process.

Sincerely,



Larry Vinzant,
Chief, Sacramento Valley Office

Copy Furnished:

John Hoole, U.S. Department of Transportation, Federal Highway Administration, 980 Ninth Street Suite 400, Sacramento, California 95814-2724

Elizabeth Goldmann, U.S. Environmental Protection Agency, Region IX, Wetlands Regulatory Office (WTR-8), Water Management Division, 75 Hawthorne Street, San Francisco, California 94105

Mark Littlefield, U.S. Fish and Wildlife Service, Wetlands Branch, 2800 Cottage Way, Room W-2605, Sacramento, California 95825



IN REPLY REFER TO:

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825

PPN 2331

September 3, 1999

Mr. Chris Collison
California Department of Transportation
ATTN: Office of Environmental Technical Studies (Monica Finn)
P.O. Box 911
Marysville, California 95901

Subject: NEPA/404 Integration Process Concurrence For Elements of the State Route
149 Widening Project Environmental Assessment.


Dear Mr. Collison:

This letter is in response to a September 1, 1999, California Department of Transportation (Caltrans) request for the U.S. Fish and Wildlife Service's (Service) concurrence with the purpose, need, criteria for the selection of project alternatives, and the range of alternatives to be included in the State Route (SR) 149 Widening Project Environmental Assessment. Our response is made pursuant to the 1994 Memorandum of Understanding on Integration of the National Environmental Policy Act and Clean Water Act Section 404 Procedures for Surface Transportation Projects and is not intended to take the place of any formal comments that may be required under the Fish and Wildlife Coordination Act or the Endangered Species Act of 1973 as amended.

As a result of the August 18, and September 1, 1999, informal NEPA/404 integration dispute resolution meetings between the Service, Caltrans, and the Federal Highway Administration, and your August 25, 1999, NEPA/404 coordination letter, the Service concurs with the purpose, need, criteria for the selection of project alternatives to be included in the SR 149 Widening Project Environmental Assessment. In addition, concurrence on the range of alternatives is given pending the inclusion of a second non-highway alternative. As discussed at the September 1, 1999, meeting, the second non-highway alternative should involve new interchanges at the existing 70/149 and 99/149 junctions with SR 149 remaining a 2 lane facility. This alternative could also include minor widening to accommodate a median barrier.

If you have any questions concerning the Service's comments on this project, please contact Jerry Bielfeldt (Wetlands Branch) at (916) 414-6580.

Sincerely,



Dale A. Pierce
Acting Field Supervisor

cc: PARD (ES)-Portland, OR
FHWA, Sacramento, CA (Attn: John Hoole)
Caltrans Hqts, Sacramento, CA
EPA, San Francisco, CA (Attn: David Tomsovic)
EPA, San Francisco, CA (Attn: Elizabeth Goldmann)
NMFS, Santa Rosa, CA.
ACOE, Sacramento, CA. (Attn: Michael Finan)
CVRWQCB, Sacramento, CA (Attn: Doug Straw)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY .

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

August 30, 2002

Susan D. Bauer, Acting Chief
Environmental Management M-2
Caltrans District 3
P.O. Box 911
Marysville, CA 95901-0911

Dear Ms. Bauer:

This letter responds to your letter of August 21, 2002, in which you requested our concurrence, under the National Environmental Policy Act/Clean Water Act Section 404 Integration Process Memorandum of Understanding (NEPA/404 MOU), on the least environmentally damaging practicable alternative (LEDPA) for the **State Route (SR) 149 Highway Improvement Project in Butte County, California.**

In response to your request regarding the LEDPA, we have reviewed the Draft Alternatives Analysis and the Draft Environmental Impact Statement (DEIS). Based on our review of these documents and attendance at the August 29, 2002 meeting in Sacramento, we concur that Alternative 3 Avoid Butte Meadowfoam is the LEDPA. We believe Alternative 3 Avoid Butte Meadowfoam would enable the Federal Highway Administration (FHWA) and Caltrans to meet the project's overall purpose while minimizing adverse project impacts to aquatic resources.

The next step in the NEPA/404 MOU process is for FHWA to seek concurrence from EPA and the U.S. Army Corps of Engineers on the conceptual mitigation plan and implementation schedule for this project. EPA is committed to being an active partner in the NEPA/404 MOU process and is available to provide early input for this next step. We are also available to review draft work products or to meet with you to ensure that the final mitigation plan satisfies these commitments and addresses all pertinent issues.

If you have questions regarding these comments, please contact Kathleen Dadey of our Wetlands Regulatory Office at (415) 972-3474, or Nancy Levin of my staff at (415) 972-3848.

Sincerely,

A handwritten signature in black ink, reading "Lisa B. Hanf", is positioned above the typed name.

Lisa B. Hanf, Manager
Federal Activities Office

cc: Congressman Wally Herger
R.C. Slovensky, Federal Highway Administration
Tom Cavanaugh, U.S. Army Corps of Engineers
Jerry Bielfeldt, U.S. Fish and Wildlife Service
Michael Aceituno, National Marine Fisheries Service



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

September 3, 2002

Regulatory Branch (199700165)

Susan Bauer
Acting Chief, Environmental Management
California Department of Transportation
P.O. Box 911
Marysville, California 95901

Dear Ms. Bauer:

I am writing in response to your request for concurrence on Alternative 3 (Avoid Butte County Meadowfoam) as the preferred alternative for the Route 149 Highway Improvement Project in Butte County.

Based on the information provided, it appears that Alternative 3 may be the least environmentally damaging practicable alternative. This tentative concurrence is in accordance with the "Memorandum of Understanding, National Environmental Policy Act and the Clean Water Act Section 404 Integration Process for Surface Transportation Projects in Arizona, California, and Nevada". Once we receive a permit application, the final Biological Assessment, and a mitigation plan, we will begin processing a Department of the Army permit for this work.

Please refer to identification number 199700165 in any future correspondence concerning this project. If you have any questions, please write to Tom Cavanaugh at the letterhead address, or email Thomas.J.Cavanaugh@usace.army.mil, or telephone 916-557-5261.

Sincerely,

Tom Cavanaugh
Chief, Sacramento Valley Office



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

January 28, 2003

Jean L. Baker, Chief
Environmental Management M-2
Caltrans District 3
P.O. Box 911
Marysville, CA 95901-0911

Dear Ms. Baker:

This letter responds to your letters of December 18, 2002 and January 13, 2003 in which you requested our concurrence, under the National Environmental Policy Act/Clean Water Act Section 404 Integration Process Memorandum of Understanding (NEPA/404 MOU), on the conceptual mitigation plan and implementation schedule for the **State Route (SR) 149 Highway Improvement Project in Butte County, California**.

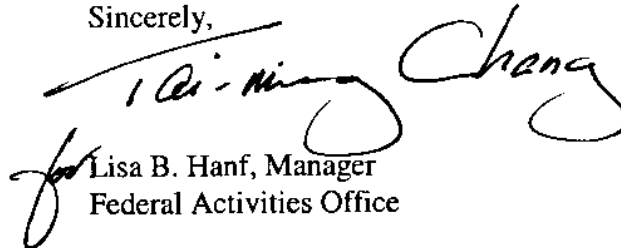
In response to your request, we have reviewed and provided input on several versions of the Conceptual Habitat Mitigation and Monitoring Proposal. The first version, submitted on December 18, 2002, was revised by Caltrans based on EPA feedback provided on December 19 and agreements made at a January 7, 2003 meeting with Caltrans, EPA, the U.S. Army Corps of Engineers, and U.S. Fish and Wildlife Service. The revised document was submitted to EPA on January 13, 2003. The January 13, 2003 document reflected some, but not all, of the agreements made at our January 7 meeting. EPA notified Caltrans of the outstanding items on January 16, 2003. Caltrans provided the remaining information in an email received by EPA on the afternoon of January 27, 2003.

Based on our review of the revised Conceptual Habitat Mitigation and Monitoring Proposal (file name: 01.24.03.but1349HMMP; modified 1/27/03 - 3:15 p.m.) and attachments (maps and tables) provided in the January 27, 2003 - 3:20 p.m. email from Caltrans, we concur on the conceptual mitigation plan and implementation schedule for this project. In order to complete our administrative record, please mail a hard copy of the attachments to my attention, at your earliest convenience.

Thank you for considering and incorporating our feedback while completing the conceptual mitigation plan and implementation schedule. The next step in the NEPA process is the preparation of the Final Environmental Impact Statement (EIS). In our comments on the Draft EIS (July 30, 2002 letter), we expressed our concern about the cumulative impacts analysis for this project, and provided specific recommendations for the Final EIS. Please let me know if we can be of assistance in addressing these and our other Draft EIS comments as you prepare the Final EIS.

If you have questions regarding this concurrence, please contact Kathleen Dadey of our Wetlands Regulatory Office at (415) 972-3474, or Nancy Levin of my staff at (415) 972-3848.

Sincerely,

A handwritten signature in black ink, appearing to read 'Lisa B. Hanf', is written over the word 'Sincerely,'. The signature is fluid and cursive.

Lisa B. Hanf, Manager
Federal Activities Office

cc: Congressman Wally Herger
R.C. Slovensky, Federal Highway Administration
Kome Ajise, Caltrans
Tom Cavanaugh, U.S. Army Corps of Engineers
Jerry Bielfeldt, U.S. Fish and Wildlife Service
Michael Aceituno, National Marine Fisheries Service
John Clark, Butte County Association of Governments



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

January 31, 2003

Regulatory Branch (199700165)

Jean L Baker, Chief
Environmental Management, M-2
California Department of Transportation, District 3
P.O. Box 911, Marysville CA 95901-0111

Dear Ms. Baker:

This concerns your January 15, 2003, request, on behalf of the Federal Highways Administration, pursuant to the 1994 NEPA/404 integration MOU for the State Route (SR) 149 Highway Improvement Project in Butte County, California

Based on the information available to us at this time, we concur on the conceptual mitigation plan for this project. For our review please provide the information requested by the Environmental Protection Agency, in their January 28, 2003, letter.

As previously discussed, the range of alternatives considered in an Environmental Impact Statement (EIS) should include alternatives to placing fill in wetlands or other waters of the United States within the study area. Every effort should be made to avoid project features which require the discharge of fill or excavation in waters of the United States, including wetlands. In the event it can be clearly demonstrated there are no practicable alternatives to filling waters of the United States, a final mitigation plan should be developed to compensate for the losses resulting from project implementation.

Please refer to identification number 199700165 in any future correspondence concerning this project. If you have any questions, please write to Tom Cavanaugh at the letterhead address, or email Thomas.J.Cavanaugh@usace.army.mil, or telephone 916-557-5261.

Sincerely,



Andrew J. Rosenau
Chief, Regulatory Branch

Copies Furnished:

Susan Bauer, California Department of Transportation, Acting
Chief, Environmental Management, P.O. Box 911, Marysville,
California 95901



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

IN REPLY REFER TO
PPN 2331

January 30, 2003

Ms. Jean L. Baker, Chief
Environmental Management, M-2
California Department of Transportation, District 3
703 B Street
Marysville, California 95901-0911

Dear Ms. Baker:

This letter is in response to a January 15, 2003, California Department of Transportation request for U.S. Fish and Wildlife Service (Service) concurrence with the conceptual mitigation plan for the Butte 70/149/99/191 Highway Improvement Project, Butte County, California.

The Service has reviewed the January 13, 2003, Habitat Mitigation and Monitoring Proposal, and the January 27, 2003, revised proposal (file name:01.24.03.but1349HMMP), and concurs with the determination the proposed plan would mitigate unavoidable habitat impacts as a result of implementing the proposed project.

Thank you for the opportunity to comment. If you have any questions, please contact Jerry Bielfeldt (Watershed Planning Branch) in the Sacramento Fish and Wildlife Office at (916) 414-6584.

Sincerely,

David L. Harlow
Acting Field Supervisor

cc:

AES, Portland, OR
FHWA, Sacramento, CA
EPA, San Francisco, CA
ACOE, Sacramento, CA
CDFG, Region II, Rancho Cordova, CA
BCAG, Chico, CA

Appendix D USFWS Biological Opinion; NMFS Concurrence

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W-2605
Sacramento, California 95825-1846

IN REPLY REFER TO:

1-1-02-F-0311

November 15, 2002

Mr. Gary N. Hamby
Division Administrator
Federal Highway Administration, California Division
980 Ninth Street, Suite 400
Sacramento, California 95814-2724

Subject: Formal Endangered Species Act, Section 7 Consultation on the Federal Highway Administration's Proposed Highway Improvement Project, State Routes 70-99-149-191, Butte County, California

Dear Mr. Hamby:

This letter is in response to your September 30, 2002, request to initiate formal consultation with the U.S. Fish and Wildlife Service (Service) for a proposed highway improvement project in Butte County, California. Your request was received in our office on September 30, 2002. The project proposes to realign and widen existing routes and rights-of-ways, construct freeway interchanges, and realign and/or construct access roads to privately owned parcels. At issue are the potential adverse effects to federally listed threatened and endangered species and their habitats including: the endangered Butte County meadowfoam (*Limnanthes floccosa* ssp. *californica*); the threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*); the threatened vernal pool fairy shrimp (*Branchinecta lynchei*); the endangered vernal pool tadpole shrimp (*Lepidurus packardii*), and their proposed vernal pool critical habitat. This response is provided pursuant to section 7(a) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*), and in accordance with the regulations governing interagency consultations (50 CFR §402).

The Service also has considered information about other federally listed species potentially occurring within the proposed project area. We have determined the project, as proposed, will not adversely affect: the threatened California red-legged frog (*Rana aurora draytonii*); the threatened giant garter snake (*Thamnophis gigas*); the endangered Greene's Tuctoria (*Tuctoria greenei*); the endangered hairy orcutt grass (*Orcuttia pilosa*); or the threatened Hoover's spurge

(*Chamaesyce hooveri*).

The initial assessment of the project area indicated low potential for occurrence of the California red-legged frog. The lack of sightings in the vicinity of the project area, fast flowing creek flows, absence of ponds, intermittent characteristics of the drainages, and abundance of bullfrogs (*Rana catesbeiana*) likely preclude the California red-legged frog's existence in the area. Surveys following the Service's 1997 *Guidance on Site Assessment and Field Surveys for California Red-legged Frogs* at Little Dry Creek, Dry Creek, Clear Creek, Gold Run Creek, Cottonwood Creek (and associated beaver dam ponds) from May to October 1999 did not identify any California red-legged frog egg masses, larvae, juveniles, or adults. A search of the California Department of Fish and Game's (CDFG) California Natural Diversity Database (CNDDDB) confirmed the closest recorded location of the California red-legged frog to the project area is approximately 15 air miles away, in Plumas National Forest, northeast of Lake Oroville. It is the Service's opinion the California red-legged frog will not be adversely affected by the proposed action it is unlikely to be present in the proposed action area.

The giant garter snake requires habitat with adequate water during early-spring through mid-fall; emergent vegetation for cover and foraging, grassy banks and openings in waterside vegetation for basking, and adjacent upland areas for cover and refuge. Although the project area contains some of the aforementioned components, in general, the drainages under consideration do not exhibit characteristics normally associated with the presence of giant garter snakes. Site assessments determined that most of the drainages in the project area have fast moving flows and lack emergent vegetation. With the exception of the wetlands at the beaver dams, these drainages have steep, well-defined banks and lack adjacent connections to other wetland areas. There are currently no records of giant garter snakes occurring east of State Route (SR) 99, outside the concentration of rice lands, and the closest CNDDDB reported occurrences of giant garter snakes are 6.0-8.5 miles west/southwest of the project area near Nelson, California and/or in Butte Creek. Therefore, the Service believes the proposed project will not adversely affect the giant garter snake as it is unlikely to occur in the action area.

Botanical surveys were conducted in 1990, 1991, 1993, 1997 and 1999 by California Department of Transportation (Caltrans) biologists and in 1992 by a private consultant. Greene's tuctoria and Hoover's spurge were observed in a vernal pool known as Pentz Pool, located north of SR 99 near the intersection of SR 99 and Durham-Pentz Road. However, Pentz Pool is outside the proposed project area, including the 250-foot indirect effects boundary for vernal pools, and will not be affected by construction. Additionally, the same botanical surveys failed to locate any hairy orcutt grass, although it is recorded to occur in Pentz Pool. It is the Service's opinion that this project, as proposed, will not adversely affect Greene's tuctoria, Hoover's spurge, or hairy orcutt grass as they have not been documented to occur within the project boundary.

The biological assessment (*Biological Assessment, Butte 70/149/99/191, Highway Improvement Project, California Department of Transportation, Butte County, California. October 1, 2002*) did not address effects to the threatened Sacramento splittail (*Pogonichthys macrolepidotus*).

The species is known to occur downstream of the project area and was historically collected from as far upstream of the Feather River as Oroville, California (Rutter 1908). Implementation of the project, as proposed, is not likely to adversely affect the threatened Sacramento splittail as sightings of Sacramento splittail occurring as far north as their historic distribution have not been documented in recent years. Additionally, the overland distance of the project site to the Sacramento and Feather Rivers, the implementation of construction Best Management Practices (BMPs), and the timing of construction to occur during the typical dry season, per CDFG's 1601 Streambed Alteration Agreement, will reduce the potential for downstream effects (*e.g.*, sedimentation) such that these effects on Sacramento splittail can be considered discountable.

Unless new information indicates the proposed action will affect the California red-legged frog; giant garter snake; Greene's Tuctoria; hairy orcutt grass; or Hoover's spurge in a way not considered, no further consultation regarding them is necessary under the Act. If new information is discovered (*e.g.*, plants or pools are located during pre-activity surveys, *etc.*), the applicant must either ensure the project does not adversely affect these species and their habitats, or reinitiate section 7 consultation.

Threatened or endangered anadromous fish which may be affected by the proposed action are under the jurisdiction of the National Marine Fisheries Service (NMFS) and, therefore, are not considered in this biological opinion.

Additionally, the Service has considered information about the western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) and the California tiger salamander (*Ambystoma californiense*), both candidate species for Federal listing. Surveys conducted since the 1980's indicate the western yellow billed cuckoo occurs along the Sacramento River and the Feather River. Given the proximity of the project area to these two rivers, the numerous riparian areas characterized by the presence of willow (*Salix* spp.) and cottonwood (*Populus* spp.), and the presence of other riparian obligate species such as the little willow flycatcher (*Empidonax trailii brewsteri*), it is possible that western yellow-billed cuckoos could occur or migrate through the project area. No western yellow-billed cuckoos were identified during the biological surveys. The Service concludes the proposed action may temporarily alter potential western yellow-billed cuckoo foraging and/or breeding habitat. Please be apprised of the protection afforded to migratory bird species such as the western yellow-billed cuckoo and the little willow flycatcher by the Migratory Bird Treaty Act of 1918, as amended, and its potential application to your project.

The endemic California tiger salamander may be the most vulnerable of the group of amphibians that breeds in rain pools. Its long developmental period may restrict its ability to reach metamorphosis in only the longest-lasting pools. Loss of vernal pools, fragmentation of pool complexes and introduction of exotic and transplanted species all have adversely affected the California tiger salamander. Pentz Pool, and pools adjacent to Gold Run Creek and the beaver ponds, are all long-lasting pools and likely provide potential habitat for the California tiger salamander. However, 1997 and 1999 surveys did not identify the presence of this species in the

project area. The nearest reported location in the CNDDDB is an isolated population at Grey Lodge Wildlife Management Area, approximately 20 miles southeast of the project area. It appears, based on the surveying effort, that the California tiger salamander does not currently inhabit the action area.

This biological opinion was prepared using the following information:

1. *Biological Assessment, Butte 70/149/99/191 Highway Improvement Project.* California Department of Transportation, October 1, 2002;
2. *Draft Environmental Impact Statement/Report, Highway Improvement Project, State Route 149, Butte County.* California Department of Transportation, May 30, 2002.
3. Meeting with representatives of the Service, Caltrans, and the Butte County Association of Governments (BCAG) discussing the timeline for the biological opinion, direct and indirect effects of the project, best manner in which to provide information to the Service about impacts, mitigation, and the development of a Habitat Conservation Plan (HCP) for Butte County, September 26, 2002;
4. Telephone conversations and electronic messages (email) between the Service, Caltrans, and BCAG employees regarding additional information required on listed species habitat and locations, minimization measures, and mitigation requirements;
5. Other references as cited in this biological opinion; unpublished information contained in Service files; personal communications with species experts and Service employees familiar with the project.

A complete administrative record of this consultation is on file at the Sacramento Fish and Wildlife Office (SFWO). Please refer to file number 1-1-02-F-0311 when requesting information concerning this consultation.

Consultation History

January 23, 1992. Meeting with California Department of Transportation (Caltrans), California Department of Fish and Game (CDFG), and the Service (J. Knight) to discuss Butte County highway improvement project and impacts to special status species.

April 1997. Interagency meeting with U.S. Army Corps of Engineers (Corps), CDFG, U.S. Environmental Protection Agency (EPA), and the Service (K. Tarp) to discuss the project purpose and need, and the range of alternatives.

October 1999. Service provided written concurrence with the project purpose and need, range of alternatives, and criteria for selection of alternatives.

March 2001. Service informed of a project design change to avoid impacts to a historic district.

June 25, 2002. Service receives draft environmental impact statement/report for review and comments.

August 29, 2002. Meeting with Corps, EPA, NMFS, the Service, Caltrans, and Federal Highways Administration (FHWA) to discuss concurrence on of Alternative #3 to avoid all direct impacts to Butte County meadowfoam.

September 17, 2002. Service receives draft biological assessment for the proposed action.

September 26, 2002. Service personnel (R. Gerson, M. Fris, and H. McQuillen) met with representatives from Butte County Association of Governments (J. Clark, Executive Director), and Caltrans representative (K. Asije) to discuss the timeline for completing the biological opinion, the appropriate compensation, and the development of an HCP to address the growth-inducing effects of the proposed action.

October 1, 2002. Service receives final biological assessment from Caltrans.

BIOLOGICAL OPINION

Description of the Proposed Action

Caltrans and the Federal Highway Administration (FHWA) are proposing a highway improvement project on SR 149 in Butte County, California, between the cities of Chico and Oroville. The proposed project would upgrade the last remaining two-lane stretch of SR 149 to a four-lane expressway, construct freeway-to-freeway interchanges at the existing SR 70/149 and SR 99/149 intersections, and realign and/or construct access roads to privately owned parcels along the route. The improvements are proposed to reduce traffic congestion and improve safety and would include the following:

- a. Construction of two additional lanes (12-foot each), one 10-foot outside shoulder, one 5-foot median shoulder, and one 60 to 72-foot median for the full length of SR 149 (4.6 miles). This would expand the width of the existing roadway from approximately 40 feet to approximately 150 feet.
- b. Construction of two-lane bridges with shoulders on SR 149 over Dry Creek, Clear Creek, and Little Dry Creek;
- c. Rehabilitation of the existing SR 149 roadway;

- d. Extension of double reinforced concrete box culvert over Gold Run Creek at SR 149 and single reinforced concrete box culvert over Cottonwood Creek at SR 149;
- e. Realignment of SR 70 between SR 149 and SR 191 approximately 360 feet, at the widest offset, west of its current location;
- f. Construction of a four-lane bridge with shoulders on new SR 70 alignment over Gold Run Creek;
- g. Construction of freeway-to-freeway interchanges at the existing SR 70/149 and 99/149 intersections;
- h. Realignment and reconstruction of the SR 70/191 intersection approximately 164 feet east of its current location. This intersection would become a 4-way intersection comprised of north and southbound SR 70, SR 191, and the realigned Table Mountain Boulevard (currently existing SR 70);
- i. Realignment of Table Mountain Boulevard by connecting it to the existing SR 70, which would then become a frontage road connecting to the new SR 70/191 intersection after the new alignments of SR 70/191 are complete;
- j. Realignment of Shippee Road, near its intersection with SR 149, to the east of its current location to allow adequate distance between the intersection and the SR 99/149 interchange. The old alignment is proposed to be abandoned.
- k. Construction of a one-lane crossing over SR 149 to Openshaw Road to maintain access to the driveways of the Warren (APN 041-210-052) and Brown (APN 041-200-041) parcels;
- l. Construct a frontage road on the west side of SR 99 north of the SR 99/149 interchange to maintain access to the Book (APN 040-057-003), Guidici (APN 040-130-011), and Dry Creek Ranch (APN 040-057-004) parcels. This road would continue north to the intersection of Durham/Dayton Highway and Oroville/Chico Highway;
- m. Construct driveway access on the east side of SR 99 from just north of the SR 99/149 interchange, southeast to Openshaw Road to maintain access to the Schlaf parcel on the east side of SR 149 (APN 040-130-040)
- n. Construct driveway access on the east side of SR 99 from just south of the SR 99/149 interchange to approximately 1640 feet north of the Dry Creek Bridge on SR 99 to maintain access to the Schlaf parcel on the east side of SR 99 (APN 041-

190-027);

- o. Acquire approximately 335 acres of additional right of way from approximately 35 parcels of land to accommodate the proposed action.

This project is located within the United States Geological Survey's (USGS) Cherokee, Hamlin Canyon, Shippee, and Oroville 7.5-minute quadrangle maps (predominantly T20N, R3E). The work is scheduled to be completed between April 15 and October 15 of each of the next three years, with the exception of work within vernal pools which will begin no earlier than May 15 and/or as determined by the on-site Service-approved biologist.

The Service defines the action area of the proposed project to include the portion of SR 99, between the Durham-Pentz Road on the north to Dry Creek to the south; all 4.6 miles of SR 149, the portion of SR 70 from SR 191 on the north to Campbell Creek on the South, and all areas out to a minimum of 250 feet on both sides of the aforementioned roadways including their realignments, improvements, expansions, and any interrelated and interdependent effects resulting from this project including, but not limited to, downstream effects, urban expansion areas, natural areas converted to agricultural land, and any other effect reasonably certain to occur in the foreseeable future. A complete description, including maps, of the project area is described in detail in the *Biological Assessment, Butte 70/149/99/191 Highway Improvement Project (October 1, 2002)* and the *Draft Environmental Impact Statement/Report, Highway Improvement Project, State Route 149, Butte County (May 30, 2002)*.

Environmental Setting

The majority of the project area is primarily flat terrain with some rolling hills and numerous watercourses to include Clear Creek, Dry Creek, Gold Run Creek, Cottonwood Creek, and Campbell Creek, all of which eventually drain into the Sacramento River. Elevation generally ranges from 120-250 feet. The rolling hills and mound topography of the region are punctuated with both narrow and broad swales underlain by both Tuscan-Anita and Red Bluff-Igo soil complexes. This combination of features supports the establishment of individual vernal pools and swale complexes.

The project area contains twelve different plant community types; four upland communities including agricultural land, ruderal grassland, annual grassland, and valley oak woodland; four wetland community types including vernal pools and swales, marsh, mixed riparian and "other wetlands"; two types of non-wetland waters consisting of unvegetated channel and riparian; and two types of man-made habitats including ponds and roadway drainages.

The upland communities are comprised of common plant species including agricultural crops, yellow star thistle (*Centaurea solstitialis*), wild oats (*Avena barbata*), ripgut brome (*Bromus diandrus*), rye (*Lolium multiflorum*), chicory (*Cichorium intybus*), prickly lettuce (*Lactuca serriola*), vetch (*Vicia sativa* var. *sativa*), valley oak (*Quercus lobata*), interior live oak (*Q.*

wislizenii), and blue oak (*Q. douglasii*).

Vernal pools and swale complexes occur throughout the project area, with the highest densities of pools occurring in the vicinity of Gold Run Creek and along the north side of SR149 between Clear Creek and the SR 149/99 intersection. Characteristic plant and animal species include annual hairgrass (*Deschampsia danthonioides*), goldfields (*Lasthenia* sp.), toad rush (*Juncus bufonius*), white-headed navarretia (*Navarretia leucocephala*), stalked popcorn-flower (*Plagiobothrys stipitatus* var. *micranthus*), dwarf sack clover (*Trifolium depauperatum*), Sacramento mesa-mint (*Pogogyne zizyphoroides*), coyote thistle (*Eryngium vaseyi* var. *vallicola*), Fremont's tidy-tips (*Layia fremontii*), butter-and-eggs (*Triphysaria erianthus*), downy navarretia (*Navarretia pubescens*), dwarf woolly-head (*Psilocarphus brevissimus*), vernal pool tadpole shrimp, and vernal pool fairy shrimp.

Marsh habitat occurs scattered throughout the project area in association with seeps, vernal pools and swale habitat, along slow moving creeks, and in artificial settings such as stock ponds and roadway drainage ditches. These seasonal freshwater marshes are dominated by Baltic rush (*Juncus balticus*), creeping spikerush (*Eleocharis macrostachya*), tall flatsedge (*Cyperus eragrostis*), sedge (*Carex nebraskensis*), lady's thumb (*Polygonum persicaria*), dallis grass (*Paspalum dilitatum*) and rabbits foot grass (*Polypogon monspeliensis*).

Mixed riparian occurs in association with Little Dry Creek, Clear Creek, Dry Creek, Gold Run Creek and Cottonwood Creek. These areas are dominated by an overstory tree canopy of willow (*Salix bonplandiana* and *S. gooddingii*), Fremont's cottonwood (*Populus fremontii*), white alder (*Alnus rhombifolia*) and valley oak; a shrub layer of sandbar willow (*Salix exigua*); and an understory of wet grasses, sedges and spikerush. Large areas of this habitat type occur near the SR 70/149 interchange in association with Gold Run and Cottonwood Creeks and their tributary drainages. Large areas also occur along Dry Creek, from the existing highway crossing, upstream along the portion of the drainage that runs parallel with Openshaw Road.

Riparian vegetation is dominant along Campbell and Clear Creeks and is found in association with other vegetation community types along the other drainages in the project area. Non-wetland riparian vegetation in the area includes patches of willow, mulefat (*Baccharis salicifolia*), and Himalayan blackberry (*Rubus discolor*) with scattered Fremont's cottonwood, California black walnut (*Juglans californica* var. *hindsii*) and Oregon ash (*Fraxinus latifolia*) trees. Grasses and forbs include mugwort (*Artemisia douglasiana*), cocklebur (*Xanthium strumarium*), common chickweed (*Stellaria media*) and willow herb (*Epilobium ciliatum*) dominate understory vegetation.

Roadway drainages occur throughout the project limits. Plant species identified in these areas include nut sedge (*Cyperus eragrostis*), verbena (*Verbena officinale*), seep monkey flower (*Mimulus guttatus*), dallis grass, rabbits foot grass, and lady's thumb. Shallow depressions in roadside ditches are characterized by vernal pool and swale species such as stalked popcorn flower, navarretia, and dwarf woolly-head.

There are three locations in the project area where wetland resources were identified as “other wetlands.” Two areas occur in pasturelands that either receive augmented irrigation water or occur behind a berm that backs up flows, causing ponding. Both of these areas occur adjacent to vernal pool and swale complexes and likely have an impervious soil layer present. The common species are dallis grass, stalked popcorn flower, Sacramento mesa-mint, buttercup (*Ranunculus canus*), hyssop loosestrife (*Lythrum hyssopifolia*) and knotweed (*Polygonum sp.*).

Proposed Conservation Measures

Best Management Practices

Caltrans has proposed to implement a suite of BMPs following Caltrans’ *Storm Water Quality Handbooks: Project Planning and Design Guide, Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WRCP) Preparation Manual, and Construction Site Best Management Practices (BMPs) Manual* (Caltrans 2000). The BMPs will consist of some or all of the following: scheduling restrictions (Caltrans 2000); preservation of existing vegetation; hydraulic mulching; hydroseeding; placement of soil binders, straw mulch, geotextiles, plastic covers and erosion control blankets/mats; construction of earthen dikes/drainages swales and lined ditches; construction of outlet protection/velocity dissipation devices, slope drains, silt fence, desilting basins, sediment traps, check dams, fiber rolls, and gravel bag berms; use of water conservation practices; regulation of dewatering, paving and grinding operations; detection and reporting of illegal connections and/or connection discharges; restrictions on vehicle and equipment cleaning, vehicle and equipment fueling, vehicle and equipment maintenance restrictions; controls on material use, stockpile management, spill prevention and control; standards for solid waste management; and measures that address concrete waste management.

Proposed Butte County Meadowfoam and Vernal Pool Crustaceans Conservation Measures

- a. The project design includes increasing slope angles of the road sides, constructing retaining walls, and reducing fills to avoid or minimize effects to vernal pool species and their habitats within the right of way;
- b. Construction work occurring in areas with the potential to affect vernal pools or swale complexes will be restricted to the roadway side of cut and fills. Cut and fill is defined as the area between the edge of the roadway surface and the distal edge of the embankment. No topography or drainage patterns will be altered outside the limits of cut and fill;
- c. Areas beyond the limits of cut and fill slopes will be designated as Environmentally Sensitive Areas (ESAs) to be avoided by work (Figure XX from K. Nelson). The work area and limits of the cut and fill will be fenced as a visual and physical barrier to construction vehicles, equipment, and personnel;

- d. Caltrans will maintain existing hydrologic connections and flow patterns on all sides of all roads within the project footprint;
- e. Construction work occurring in vernal pools and swale complexes will be restricted to the dry period only;
- f. A site specific Storm Water Pollution Prevention Plan (SWPPP) shall be developed and implemented as required by the Caltrans Statewide Non-Point Discharge Elimination System (NPDES) Permit and the State Construction General Permit. The SWPPP shall apply to all areas that are directly related to the construction activity, including, but not limited to, staging areas, storage yards, material borrow areas and storage areas, access roads, *etc.*, whether or not they exist within the Caltrans right of way. The project site shall be monitored and inspected in accordance with the provisions of the NPDES Permit;
- g. All “in-water” work will comply with the State Water Control Boards, Central Valley Basin Plan, which includes water quality standards and recommended control measures for use by the other local, State or Federal agencies. In addition, the contractor’s work will need to comply with the water pollution protection provisions of Section 7-1.01G of the Caltrans Standard Specifications, as well as all conditions contained within regulatory permits;
- h. Prior to excavation, temporary erosion control fencing will be placed down slope of areas where disturbance of native soil is anticipated. The temporary fence will be maintained in a functional condition until soil disturbance activities are completed and permanent erosion control is applied. Loose soil built up behind the fencing will be incorporated into the slope or taken off site;
- i. Native California shrub, forb and grass species will be collected from the vicinity of the project (same elevation and geographic area) and will be used for all revegetation efforts. Mulches used on the project will be from source materials that will not introduce exotic species. No wheat, barley or rice straw shall be used on the project because of the potential to introduce weeds. Erosion control will be considered functional when a uniform vegetative cover equivalent to 80 percent of the native background vegetation coverage has been established, or equivalent stabilization measures have been employed;
- j. Existing vegetation will be maintained to the maximum extent possible;
- k. The top 12 inches of topsoil (duff) shall be stockpiled (where feasible and appropriate under the discretion of the Landscape Architect) and replaced prior to placing permanent erosion controls;

- l. Disturbed areas will be re-stabilized according to Landscape Architecture and Maintenance recommendations for each phase and stage of construction;
- m. Dust control shall be applied in accordance with Caltrans standard practices. Covering of small stockpiles or areas is an alternative to applying water or other dust palliatives.

No direct effects to Butte County meadowfoam are anticipated (Figure 12, *Biological Assessment, Butte 70/149/99/191 Highway Improvement Project, October 1, 2002*). Twelve Butte County meadowfoam locations are within the existing right-of-way and thus, the projects action area. Nine of these plant locations are between 28.57 and 123.05 feet from the edge of construction. The remaining three are within 14 feet of the edge of construction, with one location being within 1.34 feet of the edge of construction.

Indirect effects to Butte County meadowfoam are estimated to affect 0.53 acres. The ideal measure to offset indirect effects to Butte County meadowfoam is to preserve in perpetuity an existing population of Butte County meadowfoam. Currently, acquisition of a preserve containing Butte County meadowfoam is not feasible. Therefore, the proposed measure for indirect effects to Butte County meadowfoam will be to contribute to the Service's Vernal Pool Species Fund at a 5:1 ratio. This will yield permanent conservation of 2.65 acres.

Conservation measures for loss of vernal pool fairy shrimp and tadpole shrimp habitat due to direct and/or indirect effects will consist of both preservation and creation components. The project, as proposed, will ensure "no net loss" of habitat for all concerned vernal pool species.

The proposed measures for vernal pool tadpole shrimp and fairy shrimp include the acquisition of a preservation easement, and/or purchase of credits at an established conservation bank, for a total of 92.66 acres of compensatory vernal pool crustacean habitat. This easement/credit would provide a preservation component of 2:1 (29.33 acres direct plus 17 acres indirect at 2:1 equals 92.66 acres total).

The creation component of the vernal pool conservation measures (1:1 ratio for 29.33 acres) will be satisfied through a contribution to the Service's Vernal Pool Species Fund.

Proposed Valley Elderberry Longhorn Beetle Conservation Measures

- a. Proposed conservation measures for adverse effects to valley elderberry longhorn beetles and their habitat will follow the Service's *1999 Conservation Guidelines for the Valley Elderberry Longhorn Beetle* for establishment, restoration, and maintenance of buffer zones; transplanting of elderberry plants; planting associated native species; and monitoring the plants.

Measures for effects to the valley elderberry longhorn beetle will follow the Service's *1999 Conservation Guidelines for the Valley Elderberry Longhorn Beetle*, except as modified by this biological opinion. The actual number of shrubs that can be viably transplanted will be determined following a field review with Service biologists. Shrubs that cannot be transplanted and are destroyed will be replaced at two-times (2x) the ratios given for each stem diameter in Table 1 in the Service's *1999 Conservation Guidelines for the Valley Elderberry Longhorn Beetle*.

Measures to offset direct impacts to elderberry shrubs will be coordinated with the Sacramento River Partners and will include replacement planting and transplanting. A comprehensive mitigation plan will be presented to the Service for their approval prior to the start of any construction.

The following table details anticipated effects to elderberry shrubs and the proposed conservation measures. These values are based on ratios specified in Table 1 of the Service's *1999 Conservation Guidelines for the Valley Elderberry Longhorn Beetle* for non-riparian setting shrubs with no exit holes present and do not include replacement ratios for those plants that can not be transplanted (as discussed previously):

Number of shrubs Directly impacted	Total number of stems > 1"	Replacement @ 1:1	Total number of stems > 3"	Replacement @ 2:1	Total number of stems > 5"	Replacement @ 3:1	Total number of replacement stems needed
22	13	13	11	22	28	84	119

Habitat Conservation Plan/Natural Communities Conservation Plan

To address indirect, growth-inducing effects of the project, Caltrans and Butte County Association of Governments (BCAG) will support and facilitate efforts to establish an HCP/NCCP(s) within Butte County. The HCP/NCCP(s) will outline adequate conservation measures for potential Federal and State listed species in the area.

- a. At a minimum, the HCP/NCCP(s) will address the Federal and State listed species known at this time that may be affected by future actions that are reasonably foreseeable as a result of the current action. Additional HCP/NCCP-covered species may be added as the HCP/NCCP(s) is being developed.
- b. The HCP/NCCP(s) will be coordinated with CDFG and will include any appropriate State listed species in the HCP/NCCP(s).
- c. The HCP/NCCP(s) will address actions that are within the land use authority of

Butte County and are reasonably foreseeable as a result of the current action including land use approvals that are related to entitlements. Additional activities may be added as the HCP/NCCP(s) is developed.

- d. The HCP/NCCP(s) will cover an area (“cumulative effects boundary” as defined in Figure 16, *Biological Assessment, Butte 70/149/99/191 Highway Improvement Project, October 1, 2002*, and Figure S-3, *Draft Environmental Impact Statement/Report, California Department of Transportation, May 30, 2002*) that is reasonably foreseeable as a result of the currently proposed highway improvement project.
- e. A draft HCP/NCCP(s) will be completed by December 2003. In the event of a delay in the schedule, Butte County and Caltrans will continue to work diligently to complete the HCP/NCCP(s) in a reasonable time.

Interim Measures and Processes

The following define the interim conservation measures and processes for the time period between implementation of the SR 149 highway improvement project and the approval of the HCP/NCCP(s). These measures only apply to those areas within the “cumulative effects boundary,” within Butte County, unless otherwise noted. Implementation of these measures and processes is intended to promote conservation of Federal and State listed species, should they be impacted as a result of the proposed project, and are to remain in effect until the HCP/NCCP(s) are completed.

1. The Service, NMFS, CDFG, BCAG, Butte County, and Caltrans recognize a mutual interest in working together for the orderly urban planning and growth that is mutually beneficial to endangered species. In order to achieve this goal, the above referenced agencies will create a working group to facilitate information exchange, decision-making, and implementation of endangered species conservation measures. This will promote implementation of the interim conservation measures, and the timely completion of the HCP/NCCP(s). The working group will be made up of representatives from each of the affected agencies, and will meet regularly (generally monthly, or as necessary) during this interim period, until the HCP/NCCP(s) is completed. Through this process, Butte County and Caltrans anticipate receiving guidance from the Service, NMFS, and CDFG regarding the development and implementation of any necessary conservation measures. This group also shall be responsible for identifying the need to bring any other stakeholders who may be affected by the HCP/NCCP(s) into the process.
 - a. *Timing:* Immediate and on-going until the HCP/NCCP(s) is completed.

2. Butte County will require new project proponents, that have not started construction or other ground disturbing activities, within the “cumulative effects boundary” to provide evidence of compliance with the Act prior to approval of any action or project such as a General Plan Amendment, zone change, or related discretionary action. Such compliance will be carried out through the normal National Environmental Policy Act (NEPA) or California Environmental Quality Act (CEQA) environmental review process. However, this does not apply to ministerial actions, previously approved projects, on-going agricultural operations, or to rebuilding or minor additions and expansions on previously developed areas, pursuant to the zoning codes of Butte County. This procedural requirement will be met by the following process:
 - a. As part of the NEPA/CEQA process, Butte County will include the following language as part of the initial study or environmental impact statement/report (EIS/EIR) for a project, if either indicates that threatened or endangered species will be adversely affected by the project:

“The applicant is hereby notified of additional conditions as stipulated by the U.S. Fish and Wildlife Service (Service) and/or the California Department of Fish and Game (CDFG). Features of the applicant’s project may adversely affect Federal or State listed threatened or endangered species. In the event of a direct impact, an applicant has the option to go through one of two processes to obtain authorization to take a Federally listed species incidental to completing this project. First, when the authorization or funding of a Federal agency is an aspect of a project that may affect federally listed species, section 7 of the Endangered Species Act (Act) requires the Federal agency to formally consult with the Service. Formal consultation is concluded when the Service issues a biological opinion to the Federal agency. The biological opinion includes terms and conditions to minimize the effect of take on listed species. The Federal agency must make the terms and conditions of the biological opinion into binding conditions of its own authorization to the project applicant. An example of this process is when the U.S. Army Corps of Engineers (Corps) consults with the Service prior to issuing a permit to fill jurisdictional waters under Section 404 of the Clean Water Act (CWA). The terms and conditions of the biological opinion become binding on the project applicant through the Corps’ 404 permit authorization. Second, when no Federal funding or authorization is involved in a project, an applicant must prepare a Habitat Conservation Plan (HCP) to obtain a permit directly from the Service in accordance with section 10(a)(1)(B) of the Act. In the event incidental take is required for State listed species, one of two options are available to the applicant. The applicant may ask CDFG to prepare a consistency determination with the Incidental Take Statement in the biological opinion prepared by the Service, or they may ask CDFG to prepare a separate

Incidental Take Statement. In either case, the State requires full mitigation for impacts to State listed species. For additional information on these processes please contact the Endangered Species Division of the Service's Sacramento Fish and Wildlife Office or the appropriate Regional Office of the CDFG."

- b. If either the initial study or EIS/EIR for a project indicates that threatened or endangered species will be adversely affected by the project, Butte County will not undertake any discretionary action or project (including issuance of grading or other permits, plan amendments, zoning changes, *etc.*) without demonstration of compliance with the Act by the project proponent, as implemented through the NEPA/CEQA process. Commensurate with the normal NEPA/CEQA environmental review process, compliance may be in the form of either: (1) a letter from the Service expressing that the project is in compliance with the Act; (2) a biological opinion issued for the project (e.g., pursuant to a CWA section 404 permit); (3) a permit issued by the Service pursuant to section 10(a)1(B) of the Act, to authorize incidental take of federally listed species for the project; and/or (4) a consistency determination with the Federal Incidental Take Statement or a separate State-issued Incidental Take Statement from CDFG.
 - c. If Butte County has questions regarding the application of this measure, or when coordination with the Service is required, the Service and other corresponding regulatory agencies will provide additional guidance through the working sessions described in Item 1 above.
 - d. *Timing:* Upon completion of this biological opinion, Butte County and Caltrans will implement the actions described above in Items 1 and 2a-c.
3. In addition to the processes described above, Butte County must identify locations of federally listed species or habitat areas within the "cumulative effects boundary" and report such occurrences to the respective regulatory agencies. As part of the interim process, Caltrans will provide Butte County with a map showing any areas of potential habitat sensitivity within the "cumulative effects boundary." In the event a discretionary project application is submitted, prior to the completion of the HCP/NCCP(s), Butte County and Caltrans agree to take all steps practical to avoid impacts or degradation to species or habitats of special concern. An example of such actions by Butte County or Caltrans would be the incorporation of the Service's 1999 *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* into the NEPA/CEQA compliance documentation. This could be accomplished through referencing the above noted map and additional biological surveys for the specific project, in compliance with NEPA/CEQA. However, this does not apply to ministerial actions, previously approved projects, on-going agricultural operations, or rebuilding or minor

additions and expansions on previously developed lands.

- a. *Timing:* The map showing habitat sensitive areas shall be prepared by Caltrans on or before December 31, 2003. Additional conservation or avoidance measures shall be developed by the working group, concurrent with the submittal of any discretionary project application within the “cumulative effects boundary.”
4. Through the map of sensitive habitat areas, Butte County, Caltrans, the Service, NMFS, and CDFG will determine the need for developing any additional interim conservation measures within the “cumulative effects boundary.” Such measures shall be developed as part of the HCP/NCCP(s) process and may become necessary in the event a discretionary project or action is requested during the interim period prior to completion of the HCP/NCCP(s).
 - a. *Timing:* On-going activity to be administered through the working group.
5. Butte County, Caltrans, the Service, NMFS and CDFG agree to not expand or contract the “cumulative effects boundary,” unless by consent of all the involved agencies.
 - a. *Timing:* On-going until completion of the HCP/NCCP(s).
6. Butte County and Caltrans agree to retain the necessary technical expertise to assist with the development and/or implementation of any interim conservation measures, development of the HCP/NCCP(s), and preparation of any supporting NEPA/CEQA documentation.
 - a. *Timing:* On or before December 31, 2002, the working group shall determine the need for any additional technical support. Upon completion of the Draft HCP/NCCP(s), the working group shall determine the need and process for retaining any additional technical assistance for the preparation of a NEPA/CEQA compliance document.

This completes the description of the proposed action. Any changes to the project description, proposed conservation measures, or the proposed HCP/NCCP process and/or interim measures will require FHWA and the applicant to reinitiate consultation with the Service per 50 CFR §402.16 and the closing (reinitiation) paragraph of this biological opinion.

Status of the Species

Butte County meadowfoam

The Butte County meadowfoam was listed as endangered on June 8, 1992 (57 **FR** 24199). Critical habitat was proposed for this species on September 24, 2002 (67 **FR** 59883). A detailed account of the taxonomy, ecology, and biology of Butte County meadowfoam is presented in these documents. A recovery plan has not been completed for this species.

Butte County meadowfoam co-occurs in the same region with woolly meadowfoam (*Limnanthes floccosa* ssp. *floccosa*), white meadowfoam (*L. alba*), and pink meadowfoam (*L. douglasii* ssp. *rosea*). Before 1973, Butte County meadowfoam was not differentiated from the more widespread woolly meadowfoam. Arroyo (1973) determined that Butte County meadowfoam was a distinct taxon and gave the species its current scientific name, which has been recognized ever since. The type locality is in Butte County between Chico and Oroville, near the intersection of SR 99 and Shippee Road (Arroyo 1973). It also is referred to commonly as Shippee meadowfoam, which is derived from the type locality (California Department of Fish and Game 1987; Ornduff 1993c).

Butte County meadowfoam is a densely pubescent (hairy), winter annual herb belonging to the “false mermaid” family (*Limnanthaceae*). The stems, which range from 1 to 10 inches in length, generally lie flat on the ground with the tips curved upward, and have few leaves in the flowering stage. White flowers with dark yellow veins at the base of each of the five petals generally appear February through April. Nutlets are produced in March and April, and the plants die back by early May (Jokerst 1989; Dole and Sun 1992).

Butte County meadowfoam seeds germinate in the late fall after the rainy season begins. Seed that does not germinate in the first year following its production may still be viable. In laboratory tests on the more common woolly meadowfoam, two-thirds of the seed remained dormant even after exposure to favorable conditions, and some ungerminated seed remained in soil samples after three years (Ritland and Jain 1984). Seed dormancy may, therefore, explain population fluctuations of up to two orders of magnitude between years in Butte County meadowfoam.

Nutlets of Butte County meadowfoam are likely dispersed by water as they can remain afloat for up to three days (Hauptli *et al.* 1978). In an experiment where nine meadowfoam taxa were seeded into artificial vernal pools (Jain 1978), only four taxa colonized other parts of the pools where they had been introduced, and only two appeared in pools where they had not been seeded, even after two years. Butte County meadowfoam was not included in the study; however, it is not expected to disperse beyond its pool or swale of origin.

Butte County meadowfoam is largely self-pollinating but has floral adaptations that allow for cross-pollination by insects. Depending on the presence and size of suitable insect populations, the rate of self-pollination may vary among years or among sites (Kalin 1971 *in* Arroyo 1973;

Dole and Sun 1992). The particular pollinators of Butte County meadowfoam have not been identified. However, other meadowfoam species are pollinated by the native burrowing bees *Andrena limnanthis* and *Panurginus occidentalis* (Thorp and Leong 1998), honeybees (*Apis mellifera*) (Kesseli and Jain 1984), beetles, flies, true bugs, butterflies, and moths (Mason 1952; Thorp and Leong 1998). It is feasible then, that Butte County meadowfoam also is pollinated by the same, or similar species. The capability of a species to adapt to its environment is a function of genetic diversity, *i.e.*, the more diverse, the more adaptable. Cross-pollination promotes genetic diversity to a much greater extent than self-pollination by generating novel combinations of genetic material. Thus, insect pollinators may provide an important evolutionary benefit to Butte County meadowfoam.

Population size in Butte County meadowfoam is affected by the amount and timing of rainfall, as well as its interaction with soil and topography. Nutlet (and therefore seed) production in Butte County meadowfoam and related taxa also varies according to environmental conditions. The growing seasons of 1990 (*i.e.*, autumn 1989 to spring 1990), 1991, and 1994 were drier than average in the Chico area, whereas the 1992 and 1993 seasons were wetter than average (Kelley *et al.* 1994). Survivorship data on one population (Doe Mill) showed that 75% of seedlings survived to maturity in 1993 compared to “almost 100%” in 1994. The poorer survivorship in 1993 has been attributed to high rainfall in December 1992 and January 1993 (Kelley *et al.* 1994). An experimentally-seeded site at the Tuscan Preserve suffered 5% greater mortality in 1994 than did the Doe Mill population, primarily because the upper part of the swale at the former site received less runoff and therefore dried out before Butte County meadowfoam had set seed (Kelley *et al.* 1994).

Overall, the largest populations of Butte County meadowfoam produce the greatest number of nutlets per plant (Dole 1988; Dole and Sun 1992). However, the number of flowers per plant is reduced in dense colonies of Butte County meadowfoam because individuals produce fewer branches and therefore fewer flowers. Competition from other plant species also reduces flower production (Crompton 1993; Kelley and Associates Environmental Sciences 1993*b*). Thus, the average number of flowers per plant differs among sites and years.

Butte County meadowfoam occurs primarily in vernal swales, and to a lesser extent on the margins of vernal pools (Arroyo 1973; Dole 1988; Jokerst 1989; CNDDB 2000). However, it does not persist in pools or swales that are inundated for prolonged periods or remain wet during the summer months, nor in drainages where water flows swiftly (Jokerst 1989; Kelley and Associates Environmental Sciences 1993*a*). It typically occurs in long, narrow bands in connected swales or on pool margins but can be found in irregular clusters in isolated drainages (Crompton 1993) and has been found occasionally in disturbed areas such as drainage ditches, firebreaks, and graded sites (McNeill and Brown 1979; Jokerst 1989; Kelley and Associates Environmental Sciences 1992*b*; Kelley and Associates Environmental Sciences 1993*a*).

Butte County meadowfoam occurs on soils of the Tuscan-Anita and the Redding-Igo complexes, specifically on the Anita and Igo soils, which are confined to the pools and swales. Tuscan and

Redding soils are restricted to the mounds. It has been observed on Anita clay soils annually regardless of rainfall but appears on Igo soils only in years of above-average rainfall (Kelley and Associates Environmental Sciences 1992a; Kelley and Associates Environmental Sciences 1992b; Crompton 1993), presumably because the former can hold approximately twice as much moisture (Kelley and Associates Environmental Sciences 1993a). Confirmed occurrences have been found at 165 to 300 feet in elevation (McNeill and Brown 1979; CNDDDB 2000).

Urban and agricultural development; resulting in altered hydrological regimes, increased grazing pressure, construction-related activities, and increased anthropocentric activities have caused the decline of Butte County meadowfoam and threatened its continued survival. Of the nine remaining populations, six are currently threatened directly or indirectly by proposed development projects (C. Sellers, City of Chico, *in litt.*, 2001). Additional changes in hydrology throughout the range of Butte County meadowfoam are possible from developments adjacent to extant populations, from further construction of roads and canals, and from grading or other surface disturbances. Moreover, subtle hydrological changes that already have taken place are likely to continue reducing seed-set in Butte County meadowfoam, leading to the eventual extirpation of some populations.

Butte County Meadowfoam Proposed Critical Habitat

The proposed rule designating critical habitat for Butte County meadowfoam establishes four critical habitat units totaling 40,326 acres based on two generalized primary constituent elements for vernal pool plants and two specific primary constituent elements for the species. Primary constituent elements include, but are not limited to, those habitat components that are essential for the primary biological needs of germination, growth, reproduction, and dispersal. The generalized primary constituent elements for the Butte County meadowfoam are (a) the necessary soil moisture and aquatic environment required for seed germination, growth and maturation, reproduction, and dispersal, and the appropriate periods of dry-down for seed dormancy and (b) to maintain both the aquatic phase and the drying phase of the vernal pool habitat. Both the wet and dry phases of the vernal pool help to reduce competition with strictly terrestrial or strictly aquatic plant species. The wet phase provides the necessary cues for germination and growth, while the drying phase allows the vernal pool plants to flower and produce seeds. Vernal pool species are ecologically dependent on seasonal fluctuations, such as absence or presence of water during specific times of the year, the duration of inundation, and the rate of drying of their habitats. Additionally, the rate of vernal pool drying, during which vernal pool plants must flower and produce seeds, is also largely controlled by interactions between the vernal pool and the surrounding uplands (Hanes *et al.* 1990; Hanes and Stromberg 1998 *in* 67 **FR** 59883).

Primary constituent elements specific to Butte County meadowfoam include: (a) vernal pools, swales, and other ephemeral wetlands and depressions of appropriate sizes and depths and the adjacent upland margins of these depressions that sustain Butte County meadowfoam germination, growth and reproduction, including but not limited to, vernal pool swales and the margins of vernal pools on the Tuscan, Redbluff, Riverbank, and Modesto geologic formations

underlain by Tuscan-Anita and Igo-Redding complex soils among others; and (b) the associated watershed(s) and hydrologic features, including the pool basin, swales, and surrounding uplands (which may vary in extent depending on pool size and depth, soil type and depth, hardpan or claypan type and extent, topography, and climate) that contribute to the filling and drying of the vernal pool or ephemeral wetland, and that maintain suitable periods of pool inundation, water quality, and soil moisture for Butte County meadowfoam germination, growth and reproduction, and dispersal, but not necessarily every year.

Conservation of Butte County Meadowfoam

The area encompassing the City of Chico, California contains the entire range of the Butte County meadowfoam. Given the uncertain status of Butte County meadowfoam and the importance of each population to the survival and recovery of this species, preservation of existing habitat with viable populations and restoration of degraded habitat/creation of habitat are essential to its conservation. Related to this is the issue of managing protected sites. Although preserving sites which support populations of Butte County meadowfoam protects these sites from future development, without adequate management, including funding, it is likely that the species will not persist in the long-term, particularly at the smaller preserves. For example, the Doe Mill Preserve population declined in recent years due to lack of adequate control of invasive grasses by grazing or burning (K. Tarp, USFWS, pers comm., March 2001), thereby resulting in reduced population size and seed set (Center for Natural Lands Management 1997).

In addition to maintaining its distribution over as much of its historic range as possible, which is needed to minimize the adverse effects of stochastic events, preservation of existing habitat containing viable populations and restoration of degraded habitat/creation of habitat is important from a genetic perspective as well. As noted earlier (Dole and Sun 1992), loss of any population could reduce the remaining overall genetic diversity of the species. Loss of a substantial portion of a population could result in additional genetic bottlenecks and further restriction of the gene pool.

Vernal Pool Tadpole Shrimp and Vernal Pool Fairy Shrimp

The vernal pool tadpole shrimp and vernal pool fairy shrimp were listed as endangered and threatened, respectively, on September 19, 1994 (59 **FR** 48136). Complete descriptions of these species are found in these documents and Simovich *et al.*, (1992) provide further details about the life history and ecology of these animals. Critical habitat was proposed for these species on September 24, 2002 (67 **FR** 59883). No recovery plan has been completed for these species.

These crustaceans are restricted to vernal pools and swales in California. The vernal pool tadpole shrimp has dorsal compound eyes, a large shield-like carapace that covers most of the body, and a pair of long cercopods at the end of the last abdominal segment (Linder 1952; Longhurst 1955; Pennak 1989). It is primarily a benthic animal that swims with its legs down. Tadpole shrimp climb or scramble over objects, as well as move along or in bottom sediments.

Their diet consists of organic detritus and living organisms, such as fairy shrimp and other invertebrates (Pennak 1989). The females deposit their eggs on vegetation and other objects on the pool bottom. Tadpole shrimp populations pass the dry summer months as diapaused eggs in pool sediments. Some of the eggs hatch as the vernal pools are filled with rainwater in the fall and winter of subsequent seasons.

The life history of the vernal pool tadpole shrimp is linked to the phenology of its vernal pool habitat. After winter rainwater fills the pools, the populations are reestablished from diapaused eggs which lie dormant in the dry pool sediments (Ahl 1991; Lanaway 1974). Ahl (1991) found that eggs in one pool hatched within three weeks of inundation and sexual maturation was reached in another three to four weeks. The eggs are sticky and readily adhere to plant matter and sediment particles (Simovich *et al.* 1992). A portion of the eggs hatch immediately and the rest enter diapause and remain in the soil to hatch during later rainy seasons (Ahl 1991). The vernal pool tadpole shrimp matures slowly and is a long-lived species (Ahl 1991). Adults are often present and reproductive until the pools dry up in the spring (Ahl 1991; Simovich *et al.* 1992).

The vernal pool fairy shrimp has a delicate elongate body, large stalked compound eyes, no carapace, and 11 pairs of swimming legs. It swims or glides gracefully upside down by means of complex beating movements of the legs that pass in a wave-like anterior to posterior direction. Fairy shrimp feed on algae, bacteria, protozoa, rotifers, and bits of detritus. The females carry the eggs in an oval or elongate ventral brood sac. The eggs are either dropped to the pool bottom or remain in the brood sac until the female dies and sinks. The "resting" or "summer" eggs are capable of withstanding heat, cold, and prolonged desiccation. When the pools fill in the same or subsequent seasons, some, but not all, of the eggs may hatch. The egg bank in the soil may consist of eggs from several years of breeding (Donald 1983). The eggs hatch when the vernal pools fill with rainwater. The early stages of the vernal pool fairy shrimp develop rapidly into adults. These non-dormant populations often disappear early in the season long before the vernal pools dry up.

The vernal pool fairy shrimp inhabits vernal pools with clear to tea-colored water, most commonly in grass or mud-bottomed swales, or basalt flow depression pools in unplowed grasslands, but one population occurs in sandstone rock outcrops and another population in alkaline vernal pools. The vernal pool fairy shrimp has been collected from early December to early May. It can mature quickly, allowing populations to persist in short-lived shallow pools (Simovich *et al.* 1992).

Vernal pool shrimp are ecologically dependent on seasonal fluctuations in their habitat, such as absence or presence of water during specific times of the year, durations of inundation, and other environmental factors that include specific salinity, conductivity, dissolved solids, and pH levels. Water chemistry is one of the most important factors in determining the distribution of vernal pool shrimp (Simovich *et al.* 1992). The genetic characteristics of these species, and ecological conditions, such as watershed continuity, indicate that populations of these animals are defined

by pool complexes rather than by individual vernal pools (Fugate 1992). Therefore, the most accurate indication of the distribution and abundance of these species is the number of inhabited vernal pool complexes. Individual vernal pools occupied by these species are most appropriately referred to as subpopulations. The pools and, in some cases, pool complexes supporting these species are usually small.

The vernal pool tadpole shrimp is sparsely distributed along the Central Valley from east of Redding in Shasta County south to Fresno County, and in a single vernal pool complex located on the San Francisco Bay National Wildlife Refuge in Alameda County. It inhabits vernal pools containing clear to highly turbid water, ranging in size from 5 square meters (54 square feet) in the Mather Air Force Base area of Sacramento County, to the 36-hectare (89-acre) Olcott Lake at Jepson Prairie in Solano County.

The vernal pool fairy shrimp is currently found in 27 counties across the Central Valley and coast ranges of California and southern Oregon and occupies a variety of vernal pool habitats. Although the vernal pool fairy shrimp is distributed more widely than most other fairy shrimp species, it is generally uncommon throughout its range, and rarely abundant where it does occur (Eng *et al.* 1990). The vernal pool fairy shrimp is known from the Stillwater Plain in Shasta County through most of the length of the Central Valley to Pixley in Tulare County, and along the central coast range from northern Solano County to Pinnacles in San Benito County (Eng *et al.* 1990; Fugate 1992; Sugnet and Associates 1993). Five additional, disjunct occurrences exist: one near Soda Lake in San Luis Obispo County; one in the mountain grasslands of northern Santa Barbara County; one on the Santa Rosa Plateau in Riverside County, one near Rancho California in Riverside County, and a recently discovered population near Medford, Oregon (Brent Helm, pers. com. 1998). Three of these five isolated occurrences each contain only a single pool known to be occupied by the vernal pool fairy shrimp.

The primary historic dispersal method for the vernal pool tadpole shrimp and vernal pool fairy shrimp likely was large scale flooding resulting from winter and spring rains which allowed the animals to colonize different individual vernal pools and other vernal pool complexes (J. King, pers. comm., 1995). This dispersal currently is non-functional due to the construction of dams, levees, and other flood control measures, and widespread urbanization within significant portions of the range of this species. Waterfowl and shorebirds likely are now the primary dispersal agents for vernal pool tadpole shrimp and vernal pool fairy shrimp (Brusca *in litt.*, 1992; King *in litt.* 1992; Simovich *in litt.* 1992). The eggs of these crustaceans are either ingested and later excreted (Krapu 1974; Swanson *et al.* 1974; Driver 1981; Ahl 1991) and/or adhere to the legs and feathers where they are transported to new habitats.

The vernal pool tadpole shrimp and vernal pool fairy shrimp are imperiled by a variety of human-caused activities, primarily urban development, water supply/flood control projects, and land conversion for agricultural use. Habitat loss occurs from direct destruction and modification of pools due to filling, grading, discing, leveling, and other activities, as well as modification of surrounding uplands which alters vernal pool watersheds. Other activities which adversely affect

these species include off-road vehicle use, certain mosquito abatement measures, and pesticide/herbicide use.

Holland (1978) estimated that between 67 and 88 percent of the area within the Central Valley of California which once supported vernal pools had been destroyed by 1973. However, an analysis of this report by the Service revealed apparent arithmetic errors which resulted in a determination that a historic loss between 60 and 85 percent may be more accurate. Regardless, in the ensuing years, threats to this habitat type have continued and resulted in a substantial amount of vernal pool habitat being converted for human uses in spite of Federal regulations implemented to protect wetlands. For example, the U.S. Army Corps of Engineers Sacramento District has authorized the filling of 189 hectares (467 acres) of wetlands between 1987 and 1992 pursuant to Nationwide Permit 26 (U.S. Fish and Wildlife Service 1992). The Service estimates that a majority of these wetland losses within the Central Valley involved vernal pools, the endemic habitat of the vernal pool tadpole shrimp and vernal pool fairy shrimp. Current rapid urbanization and agricultural conversion throughout the ranges of these two species continue to pose the most severe threats to the continued existence of the vernal pool tadpole shrimp and vernal pool fairy shrimp. The Corps' Sacramento District has several thousand vernal pools under its jurisdiction (Coe 1988), which includes most of the known populations of these listed species. It is estimated that within 20 years 60 to 70 percent of these pools will be destroyed by human activities (Coe 1988), *i.e.*, by the year 2008.

In addition to direct habitat loss, the vernal pool habitat for the vernal pool tadpole shrimp and vernal pool fairy shrimp also has been and continues to be highly fragmented throughout their ranges due to conversion of natural habitat for urban and agricultural uses. This fragmentation results in small isolated vernal pool tadpole shrimp and vernal pool fairy shrimp populations. Ecological theory predicts that such populations will be highly susceptible to extirpation due to chance events, inbreeding depression, or additional environmental disturbance (Gilpin and Soule 1986, Goodman 1987a,b). If an extirpation event occurs in a population that has been fragmented, the opportunities for recolonization would be greatly reduced due to physical (geographical) isolation from other (source) populations.

Vernal Pool Tadpole Shrimp Proposed Critical Habitat

The proposed rule designating critical habitat for vernal pool tadpole shrimp establishes 18 critical habitat units totaling 719,965 acres based on two generalized primary constituent elements for all four vernal pool crustaceans considered in the proposed rule, and two specific primary constituent elements for the species. Primary constituent elements provide for the physiological, behavioral, and ecological requirements of the vernal pool crustaceans. The generalized primary constituent elements for the vernal pool crustaceans are (a) provides the aquatic environment required for cyst incubation and hatching, growth and maturation, reproduction, feeding, sheltering, and dispersal, and the appropriate periods of dessication for cyst dormancy and to eliminate predators such as bullfrogs, fish, and other aquatic predators that depend on year round inundation of wetland habitats to survive; and (b) to maintain the aquatic

phase of the vernal pool habitat. The entire vernal pool complex, including the pools, swales, and associated uplands, is essential to support the aquatic functions of the vernal pool habitat.

Although the uplands are not actually occupied by vernal pool crustaceans, they nevertheless are essential to the conservation of vernal pool habitat and crustaceans because they maintain the aquatic phase of vernal pools and swales. Associated uplands are also essential to provide nutrients that form the basis of the vernal pool food chain, including a primary food source for the vernal pool crustaceans.

The primary constituent elements specific to the vernal pool tadpole shrimp include: (a) vernal pools, swales, and other ephemeral wetlands and depressions of appropriate sizes and depths that typically become inundated during winter rains and hold water for sufficient lengths of time necessary for vernal pool tadpole shrimp incubation, reproduction, dispersal, feeding, and sheltering, but which are dry during the summer and do not necessarily fill with water every year; including but not limited to vernal pools on Redding and Corning soils on high terrace landforms, and (b) the geographic, topographic, and edaphic features that support aggregations or systems of hydrologically interconnected pools, swales, and other ephemeral wetlands and depressions within a matrix of surrounding uplands that together form hydrologically and ecologically functional units called vernal pool complexes. These features contribute to the filling and drying of the vernal pool, and maintain suitable periods of pool inundation, water quality, and soil moisture for vernal pool crustacean hatching, growth and reproduction, and dispersal, but not necessarily every year.

Vernal Pool Fairy Shrimp Proposed Critical Habitat

The proposed rule designating critical habitat for vernal pool fairy shrimp establishes 35 critical habitat units totaling 1,130,605 acres based on the same two generalized primary constituent elements as for the vernal pool tadpole shrimp, and two additional species-specific primary constituent elements that mirror the vernal pool tadpole shrimp primary constituent elements, with the exception to the geological formations on which the pools are formed. The primary constituent elements specific to the vernal pool fairy shrimp include: (a) vernal pools, swales, and other ephemeral wetlands and depressions of appropriate sizes and depths that typically become inundated during winter rains and hold water for sufficient lengths of time necessary for vernal pool fairy shrimp incubation, reproduction, dispersal, feeding, and sheltering, including but not limited to Northern Hardpan, Northern Claypan, Northern Volcanic Mud Flow, and Northern Basalt Flow vernal pools formed on a variety of geologic formations and soil types, but which are dry during the summer and do not necessarily fill with water every year; and (b) the geographic, topographic, and edaphic features that support aggregations or systems of hydrologically interconnected pools, swales, and other ephemeral wetlands and depressions within a matrix of surrounding uplands that together form hydrologically and ecologically functional units called vernal pool complexes. These features contribute to the filling and drying of the vernal pool, and maintain suitable periods of pool inundation, water quality, and soil moisture for vernal pool crustacean hatching, growth and reproduction, and dispersal, but not necessarily every year.

Valley elderberry longhorn beetle

The valley elderberry longhorn beetle was listed as a federally threatened species on August 8, 1980 (45 **FR** 52803). A detailed account of the taxonomy, ecology, and biology of the species is presented in *The Distribution, Habitat, and Status of the Valley Elderberry Longhorn Beetle* (Barr 1991) and in the *1984 Valley Elderberry Longhorn Beetle Recovery Plan* (U.S. Fish and Wildlife Service 1984). Two areas along the American River in the Sacramento metropolitan area were designated as critical habitat for the valley elderberry longhorn beetle concurrently with its Federal listing (45 **FR** 52803). In addition, the *1984 Valley Elderberry Longhorn Beetle Recovery Plan* identifies two areas, one along Putah Creek, Solano County, and another area west of Nimbus Dam along the American River Parkway, Sacramento County, that are considered essential habitat for the valley elderberry longhorn beetle. These areas support large numbers of mature elderberry plants with extensive evidence of use by the valley elderberry longhorn beetle.

The valley elderberry longhorn beetle was first described in 1921 from specimens collected near Sacramento, California. It was later determined to be endemic to moist valley oak woodlands along the margins of rivers and streams in the lower Sacramento and lower San Joaquin Valleys of California. The beetle is dependent on its host plant, the elderberry, which is a locally common component of the remaining riparian forests and savannah areas and, to a lesser extent, the mixed chaparral-foothill woodlands of the Central Valley.

Adults are generally present on elderberry shrubs from March through June. During this period, the adults mate, and the females lay eggs on living elderberry plants. The female generally lays eggs either singularly, or in small groups, in crevices in the bark or at the junctures of stems and leaves along the trunk of the plant. Presumably, eggs hatch shortly after they are laid and the larvae bore into the pith of larger stems and roots where they remain until they mature. Just prior to the pupal stage, larvae open an emergence hole in the bark and then return to the pith to pupate. Use of the elderberry shrubs by the valley elderberry longhorn beetle is rarely apparent as the only exterior evidence of the shrub's use by the beetle is the "exit hole" created by the larvae just prior to the pupal stage. Larvae appear to be distributed primarily in elderberry stems that are one inch in diameter or greater at ground level.

Habitat destruction was the primary factor contributing to the need to federally list the valley elderberry longhorn beetle. Riparian forests, the primary habitat for the beetle, have been severely depleted throughout the Central Valley over the last two centuries (Katibah 1984; Thompson 1961; Roberts *et al.* 1977). The *1984 Valley Elderberry Longhorn Beetle Recovery Plan* attributed the loss and alteration of this riparian habitat to agricultural conversion, grazing, levee construction, stream and river channelization, removal of riparian vegetation, riprapping of shoreline, recreation, and industrial and urban development.

The valley elderberry longhorn beetle probably occurs naturally at low densities and probably has a limited dispersal capability (Barr 1991; Collinge *et al.* 2001; Huxel 2000). This makes the

beetle extremely vulnerable to the negative effects associated with habitat loss and fragmentation. Small, isolated subpopulations are susceptible to extirpation from random demographic, environmental, and/or genetic events (Shaffer 1981; Lande 1988; Primack 1998). A large area of habitat may support a single large population, whereas smaller subpopulations result from habitat fragmentation and isolation. These subpopulations may tend to lose genetic variability through genetic drift. This generally leads to inbreeding depression and a lack of adaptive flexibility. Ultimately, these smaller populations are more vulnerable to random fluctuations in reproductive and mortality rates, and are more likely to be extirpated by random environmental factors. Barr (1991) found that small, isolated habitat remnants were less likely to be occupied by beetles than larger patches, indicating that beetle subpopulations are extirpated from small habitat fragments, or may be unable to re-colonize isolated patches of habitat. Barr (1991) and Collinge *et al.* (2001) consistently found beetle exit holes occurring in clumps of elderberry bushes rather than isolated bushes, suggesting that isolated shrubs do not typically provide long-term viable habitat for this species. Huxel (2000), used computer simulations of colonization and extinction patterns for the beetle, based on differing dispersal distances, and found that short dispersal simulations best matched census data in terms of site occupancy. This suggests that in the natural system dispersal, and thus colonization, is limited to nearby sites.

Habitat fragmentation not only isolates small populations, but also increases the interface between habitat and urban or agricultural land, thereby increasing negative edge effects such as the invasion of non-native species (Huxel 2000; Soule 1990) and pesticide contamination (Barr 1991). Recent evidence indicates that the invasive Argentine ant (*Linepithema humile*) poses a risk to the long-term survival of the valley elderberry longhorn beetle. Surveys along Putah Creek found beetle presence where Argentine ants were not present or had recently colonized, and beetle absence from otherwise suitable sites where Argentine ants had become established (Huxel 2000). The Argentine ant has been expanding its range throughout California since its introduction around 1907, especially in riparian woodlands associated with perennial streams (Holway 1998; Ward 1987). Huxel (2000) states that, given the potential for Argentine ants to spread with the aid of human activities such as movement of plant nursery stock and agricultural products, this species may come to infest most drainages in the Central Valley along the valley floor, where the beetle is found.

Direct spraying and pesticide drift in or near riparian areas is likely to adversely affect the valley elderberry longhorn beetle and its habitat. Pesticides have been identified as one of a number of potential causes of pollinator species' declines, and declines of other insects beneficial to agriculture (Ingraham *et al.* 1996). Although there have been no studies specifically focusing on the effects of pesticides on the beetle, it is likely that the beetle, typically occurring adjacent to agricultural lands, may have suffered pesticide-induced declines as well.

Grazing by livestock damages or destroys elderberry plants and inhibit regeneration of seedlings. Cattle readily forage on new growth of elderberry, which may explain the absence of valley elderberry longhorn beetles at manicured elderberry stands (U.S. Fish and Wildlife Service 1984). Habitat fragmentation exacerbates problems related to exotic species invasion and cattle

grazing by increasing the edge:interior ratio of habitat patches, facilitating the penetration of these influences.

Environmental Baseline

Butte County Meadowfoam

Butte County meadowfoam has been found only in Butte County, California. All 13 of the occurrences recognized by the CNDDDB (2002) had been reported by 1992. Five are in northern and northeastern Chico near the municipal airport, four (including the type locality) are from the area around Shippee (northwest of Oroville), and three are from southeastern Chico. The other occurrence, northeast of the town of Nord, contained only one plant. However, the area indicated would be in the same vicinity as a 1917 collection.

Two occurrences of Butte County meadowfoam have been extirpated, one each in northern and southeastern Chico (Jokerst 1989, Dole and Sun 1992, U.S. Fish and Wildlife Service 1992, CNDDDB 2001). One population, which consisted of 10 plants in 1980, has not been seen in the ensuing years. The other nine occurrences are presumed to be extant (CNDDDB 2002), although some have been reduced in extent. Not counting the Nord area, which has not been studied, the extant occurrences represent four races (Jokerst 1989, Dole and Sun 1992). These occur in four natural centers of concentration: northern, northeastern, and southeastern Chico, and the area near Shippee.

In 1991, Caltrans reported locating approximately 40 pools and swales harboring Butte County meadowfoam within one section (1 square mile) along State Route 149 (U. S. Fish and Wildlife Service 1992). One site was located between Cottonwood Creek and Gold Run, and two locations were between Gold Run and Dry Creek. The SR 149 population was ranked third in size, with 17,575 individuals in 1992 (Caltrans 2002). In 1999, Caltrans biologists identified Butte County meadowfoam in 67 sites/subpopulations adjacent to Gold Run Creek, on the north and south side of SR 149. Thirty-six sites were north of Openshaw Road (representing 65% of the 17,575 plants), 12 sites were between Openshaw Road and SR 149, and 19 sites were south of SR 149. Of the total number of sites recorded, 13 are located within the action area. Twelve of these subpopulations are in vernal pools and one is in a drainage ditch. The specific numbers of plants in each of the 12 locations is unknown, however, approximately 4000 plants (23%) comprising the second largest concentration of Butte County meadowfoam, are located within the drainage ditch.

Urban and agricultural development in the greater Chico area is responsible for the destruction of two occurrences of Butte County meadowfoam (U.S. Fish and Wildlife Service 1992; CNDDDB 2001). All of the Chico-area populations have been impacted by development projects or fragmented by the construction of roads or canals; several of the now-separate occurrences were likely contiguous in the past. The roads and canals also altered the drainage patterns at many sites, reducing their suitability for Butte County meadowfoam by creating conditions too dry or

too wet for its survival (Dole 1988; Jokerst 1989; Kelley and Associates Environmental Sciences 1992b). Although some plants were observed at the type locality as of 1989, the site had been severely degraded by grading, agricultural use, and off-road vehicles and this population is now considered extirpated (Jokerst 1989; Dole and Sun 1992; CNDDDB 2001). Several populations have been reduced in size by surface disturbances such as grading and removal of topsoil (Jokerst 1989; U.S. Fish and Wildlife Service 1992).

Butte County Meadowfoam Proposed Critical Habitat

Approximately two-thirds of the project is occurring within Unit 4 (Oroville Unit, Butte County) of the proposed designated critical habitat for Butte County meadowfoam. This unit encompasses 12,382 acres and was proposed as critical for Butte County meadowfoam because it contains vernal pools and swales on the Tuscan, Red Bluff and Riverbank geologic formations where the species is found (Holland 1998; Liss 2001; CNDDDB 2001). This unit represents one of only four units for Butte County meadowfoam across its entire range and it contains individuals from the southern race of Butte County meadowfoam, so it is an important component of the species genetic diversity.

The lands included within this unit are privately owned. Urban development, highway expansion and construction, agricultural conversion, and hydrologic disruptions or modifications have greatly impacted vernal pool habitats and restricted Butte County meadowfoam's distribution throughout this unit. The distribution of the species and vernal pool habitats within the Chico area have become highly fragmented and isolated from each other.

Vernal Pool Tadpole Shrimp and Fairy Shrimp

The vernal pool tadpole shrimp is known from 19 populations in the Central Valley, ranging from east of Redding in Shasta County south to Fresno County, and from a single vernal pool complex located on the San Francisco Bay National Wildlife Refuge in Alameda County. The vernal pool fairy shrimp is known from 32 populations extending from Stillwater Plain in Shasta County through most of the length of the Central Valley to Pixley in Tulare County, and along the central coast range from northern Solano County to Pinnacles in San Benito County (Eng *et al.* 1990; Fugate 1992; Sugnet and Associates 1993) and a disjunct population on the Agate Desert in Oregon. Five additional, disjunct populations exist: one near Soda Lake in San Luis Obispo County; one in the mountain grasslands of northern Santa Barbara County; one on the Santa Rosa Plateau in Riverside County, one near Rancho California in Riverside County and one on the Agate Desert near Medford, Oregon. Three of these isolated populations each contain only a single pool known to be occupied by the vernal pool fairy shrimp.

Vernal pool tadpole shrimp were recorded in the Pentz Pool in 1973 (CNDDDB 1999) and in the immediate SR 149 project area in 1993 (BioSystems 1993). In the 1993 surveys, BioSystems identified this species in pools at both the west end and the east end of SR 149. The species was

identified in six of the 89 ponded habitats surveyed (BioSystems 1993). Caltrans biologists verified these occurrences in 1997. Since the initial surveys identified this species throughout the vernal pool/swale complexes of the project area, Caltrans decided to assume the presence of vernal pool tadpole shrimp in the vernal pools and swales that will be affected by the project.

BioSystems (1993) also documented the presence of vernal pool fairy shrimp in the action area. This species was recorded in 26 of the 89 ponded water areas identified as appropriate habitat. These occurrences were verified in 1997 by Caltrans biologists, but no protocol surveys were initiated. Because the initial surveys identified this species in the vernal pool/swale complexes throughout the project area, Caltrans also decided to assume the presence of vernal pool fairy shrimp in the vernal pools and swales that will be affected by the project.

Vernal Pool Tadpole Shrimp Proposed Critical Habitat

The proposed action is occurring completely within Unit 4 (Oroville Unit, Butte and Yuba Counties) of the proposed designated critical habitat for the vernal pool tadpole shrimp. This unit encompasses 39,474 acres and is proposed as critical habitat for vernal pool tadpole shrimp because it contains occurrences of the species and vernal pools, swales, and other ephemeral wetlands and depressions of appropriate sizes and depths necessary for vernal pool tadpole shrimp to complete their life cycle (Holland 1998, CNDDDB 2001). This unit contains some of the few areas where vernal pool tadpole shrimp are found in Northern Volcanic Mudflow vernal pools, including vernal pools found on the Tuscan and Lovejoy Basalt geologic formations. Vernal pool tadpole shrimp also occur within Northern Hardpan vernal pools in this unit, including pools formed on the Riverbank and Modesto geologic formations.

The majority of the lands included within this unit are privately owned. Ownership and protected lands within the unit includes the Bureau of Land Management (119 acres), the U.S. Forest Service (194 acres), the natural resource Conservation Service's Wetland Reserve Program easements (35 acres), and CDFG administered lands (173 acres). The amount of vernal pool habitat currently protected within the unit is very small and the pools within this unit are highly threatened due to their location on the lower elevation slopes adjacent to agricultural and urban development. Urban expansion, particularly in the vicinity of Chico, is the greatest threat to existing vernal pool habitats throughout this unit.

Vernal Pool Fairy Shrimp Proposed Critical Habitat

The project, as proposed is not occurring within proposed critical habitat for the vernal pool fairy shrimp. However, the resulting growth-inducing effects of this action may adversely affect one or more critical habitat units for the vernal pool fairy shrimp. Therefore, it is included in this biological opinion.

Valley Elderberry Longhorn Beetle

The valley elderberry longhorn beetle's current distribution is patchy throughout the remaining habitat of the Central Valley from Redding to Bakersfield. Surveys conducted in 1991 (Barr 1991) found evidence of beetle activity at 28 percent of 230 sites with elderberry shrubs. The 1991 report lists 15 survey locations within Butte County, of which 8 sites had evidence of previous or current valley elderberry longhorn beetle populations (Big Chico Creek, lower Bidwell Park in Chico; and Oroville Wildlife Area, southwest of Oroville). In April 1993, BioSystems documented 47 elderberry shrubs in five discrete areas near the immediate SR 149 project area. The count of stems greater than one-inch in diameter for these 47 shrubs was 90. One shrub, growing in the Great Valley willow scrub habitat along a ditch near the southeast end of SR 149, had a single exit hole.

The latest survey, using current project design plans, show a total of 22 elderberry shrubs (52 stems) located within 100 feet of the edge of construction. All 22 shrubs will be directly affected and removed due to the project.

Effects of the Proposed Action*Butte County meadowfoam*

Construction will avoid all direct effects to Butte County meadowfoam. No individual plants, populations, or sub-populations will be destroyed or removed through construction activities. However, the edge of construction will come within 1.34 feet of an existing location of Butte County meadowfoam. Therefore, since there are Butte County meadowfoam pools/swales in the proposed right of way and near planned construction activity, the Service expects there will be indirect effects. This is estimated to be 0.53 acres.

Indirect effects include alteration to surface and subsurface water flow and alteration of inundation patterns; increases in contaminants from roadway surfaces and the use of pesticide and/or mechanical means to control vegetation along right of ways; increases in erosion and sedimentation, potential effects to plant pollinators, the introduction of exotic vegetation, and changes in land use patterns (*i.e.*, urbanization) as a result of the expansion and reconstruction of roadways. All of these effects have the potential to disturb the reproductive abilities of individual plants and populations by decreasing seed and nutlet production thereby resulting in decreased numbers and/or distribution of plants in subsequent generations.

In addition to the effects associated with leveling land for construction purposes (*i.e.*, filling low lying areas), infrastructure development can have indirect effects on the hydrology of vernal pool habitats and the surrounding upland areas. Projects involving, or facilitating, the coverage of land surfaces with concrete and asphalt, the installation of drainage systems, watering systems, *etc.*, can affect the amount and quality of water available to the perched water tables characteristic of vernal pool areas. Changes to the perched water table can lead to alterations in

the rate, extent, and duration of inundation (water regime) of the remaining habitat. Grading for roads may affect the water regime of vernal pool habitat, particularly when grading involves cutting into the substrata in or near these areas. Exposure of sub-surface layers of soil at road cuts may hasten the loss of water from adjacent habitat by mass flow through networks of cracks, lenses of coarser material, animal burrows, old root channels, or other macroscopic channels. Any decrease in the duration of inundation of vernal pool habitat can affect the reproductive success of species present, including the Butte County meadowfoam, especially considering it exists at the “waterline” within swales, and at times, pools. Erosion and sedimentation associated with road building can alter vernal pool habitat through the transport and deposition of sediments into these areas, thereby altering the depth, temperature, and water quality of a pool or complex.

Roads in or near the watersheds of vernal pool habitat can lead to additional effects through the introduction of chemically laden runoff (i.e., petroleum products) from the road surfaces. The urban runoff from chemical contamination can kill listed species by poisoning or decreasing their reproductive abilities. Road maintenance activities may include the introduction of pesticides into the environment and/or activities such as routine mowing, discing, and/or grading of shoulders and ditches. Pesticides such as herbicides are specifically designed to control vegetation and are generally not target specific, although some are specific to certain types of plants such as broadleaf plants or grasses. Therefore, any spraying of pesticides to control invasive, non-native vegetation may affect Butte County meadowfoam through direct contact and/or indirect spray drift, run-off, sub-surface transport, *etc.*

There is an increased risk of introducing weedy, non-native plants into the vernal pools and swales both during and after construction due to soil disturbance from clearing and grubbing operations and, in general, the vegetation disturbance associated with the use of heavy equipment. Many non-native plants can out-compete native vegetation, thereby reducing the reproductive success of the natives. In extreme cases, entire areas can be permanently devoid of native vegetation as a result of non-native introductions.

In addition to the effects detailed above, the proposed highway improvement project will likely contribute to a local and range-wide trend of urbanization and habitat loss, degradation, and fragmentation, the principal reasons that vernal pool species have declined. The indirect effects of increased urbanization include increased traffic with a resulting increase in roadway surface pollutants and air pollutants, and increased housing development and the associated anthropocentric activities (*e.g.*, recreation). These effects on vernal pool species are not quantifiable and are dependent on the strategies employed by local and regional planning agencies to minimize effects to the environment. Therefore, the effects, as described above, will be minimized and mitigated through implementation of reasonable and prudent measures in the Incidental Take Statement below and through the development of the HCP/NCCP(s).

Butte County Meadowfoam Proposed Critical Habitat

Based on the primary constituent elements previously described, any form of construction, associated with the proposed project, that occurs in or near vernal pool habitat has the potential to affect Butte County meadowfoam proposed critical habitat through direct and indirect effects. These effects include, but are not limited to, altered hydrologic regimes that affect the surrounding upland areas, vernal pools, or swale complexes such that they fail to function properly from altered influxes of water, changes in inundation periods and depths, altered dry-down periods and durations, water temperature changes, increased sedimentation and erosion, construction-related contaminants, increases in contaminated surface run-off (*e.g.*, increased motor vehicle traffic causing an increase in oils, anti-freeze, *etc.*), and increases in anthropocentric activities within vernal pool habitat (*e.g.*, housing developments, recreational uses, *etc.*).

The project, as proposed, will have no direct effect on proposed Butte County meadowfoam critical habitat. However, the anticipated growth-inducing effects (*i.e.*, urbanization) of this action may adversely affect the proposed critical habitat in the reasonable foreseeable future. These effects include altered hydrologic regimes that affect the surrounding upland areas, vernal pools, and swale complexes such that they fail to function properly from altered influxes of water; changes in inundation periods and depths; altered water quality or temperature; changes in soil moisture content; and increases in anthropocentric activities within vernal pool habitat (*e.g.*, housing developments, recreational uses, *etc.*). As discussed previously, Butte County has agreed to continue working on an HCP/NCCP with the Service and CDFG to address the growth-inducing effects of this action.

Vernal Pool Tadpole Shrimp and Fairy Shrimp

The Service considers that an entire vernal pool is directly affected if any part of the vernal pool is destroyed. Filling of a portion of a pool will decrease the size of the pool resulting in a change in the period of inundation and in the capacity of the pool to buffer potential changes in water temperature caused by solar radiation. The biota of vernal pools and swales can change when the hydrologic regime is altered and small changes can have deleterious effect on entire populations of vernal pool crustaceans (Bauder 1986, 1987). Survival of aquatic organisms like vernal pool fairy shrimp is directly linked to the water regime of their habitat (Zedler 1987). Therefore, construction near vernal pool areas will, at times, result in the decline of local sub-populations of vernal pool organisms, including vernal pool fairy shrimp and tadpole shrimp and/or their cysts.

Indirect effects are caused by, or result from, the proposed action, are later in time, and are reasonably certain to occur. Habitat indirectly affected includes all habitat supported by destroyed upland areas and swales, and all habitat otherwise damaged by loss of watershed, human intrusion, introduced species, and pollution caused by the project. The Service considers all vernal pools not considered to be directly affected, but within 250 feet of the proposed project to be indirectly affected by project implementation.

Individual listed crustaceans and their cysts may be directly injured or killed by activities that damage the vernal pools in which they exist. The proposed project would: (1) directly affect 29.33 acres and indirectly affect 17.0 acres of vernal pool habitat for the listed vernal pool crustaceans for a total of 46.33 acres; (2) contribute to the fragmentation of the remaining listed crustacean habitat located in Butte County; and (3) increase construction-related and recreational disturbance to the vernal pool tadpole shrimp and vernal pool fairy shrimp.

Similar to Butte County meadowfoam, alterations to surface and subsurface water flow and alteration of inundation patterns; increases in contaminants from roadway surfaces and the use of pesticide and/or mechanical means to control vegetation along right of ways; increases in erosion and sedimentation, potential effects to plant pollinators, changes in land use patterns (*i.e.*, urbanization) as a result of the expansion and reconstruction of roadways all have the potential to affect vernal pool crustaceans.

The ground disturbing activities associated with the proposed project are expected to result in increases in erosion and sedimentation. Sedimentation in pools supporting listed crustaceans may result in decreased cyst viability, decreased hatching success, and decreased survivorship among early life history stages, thereby reducing the number of mature adults in future wet seasons.

Infrastructure development frequently results in human intrusion into surrounding areas. Human intrusion is a mechanism by which trash or hazardous waste can be introduced into remaining habitat areas (Bauder 1986, 1987). Disposal of waste materials can eliminate habitat, disrupt pool hydrology, or release substances into pools that are toxic or that adversely affect water chemistry. Off-road vehicle use and other recreational activities associated with humans can lead to wheel ruts, soil compaction, increased siltation, destruction of native vegetation, and an alteration of pool hydrology.

The introduction and increase of chemically laden runoff and/or pesticide use from the road surfaces and right of ways can have adverse effects on all listed vernal pool crustaceans and/or their cysts. Individuals may be killed directly or suffer reduced fitness through physiological stress or a reduction in their food base due to the presence of these chemicals.

Additionally, as detailed for the Butte County meadowfoam, the proposed highway improvement project will contribute to a local and range-wide trend of urbanization and habitat loss, degradation, and fragmentation at an unquantifiable level. These effects will be minimized and mitigated through implementation of reasonable and prudent measures in the Incidental Take Statement below and through the development of the HCP.

Vernal Pool Tadpole Shrimp and Fairy Shrimp Proposed Critical Habitat

Based on the primary constituent elements previously described for the vernal pool tadpole shrimp, any form of construction, associated with the proposed project, that occurs in or near

vernal pool habitat has the potential to disrupt vernal pool crustacean critical habitat through direct and indirect effects. These effects include altered hydrologic regimes that affect the surrounding upland areas, vernal pools, and swale complexes such that they fail to function properly from altered influxes of water; changes in inundation periods and depths; altered water quality or temperature; changes in soil moisture content; and increases in anthropocentric activities within vernal pool habitat (*e.g.*, housing developments, recreational uses, *etc.*).

The project, as proposed, will have no direct effect on the proposed vernal pool fairy shrimp critical habitat. However, the anticipated growth-inducing effects (*i.e.*, urbanization) of this action may adversely affect the designated critical habitat in the reasonable foreseeable future. These effects are the same type of effects as those stated above for vernal pool tadpole shrimp, including direct killing of individuals or populations, altered hydrologic regimes, altered water and soil qualities, and increases in anthropocentric activities. As discussed previously, Butte County has agreed to continue working on an HCP/NCCP with the Service and CDFG to address the growth-inducing effects of this action.

Valley Elderberry Longhorn Beetle

This action will adversely affect the valley elderberry longhorn beetle. A total of 22 elderberry shrubs with a total of 52 stems greater than one inch in diameter at ground level will be directly affected by the proposed project. Although no stems contained old beetle emergence holes, any beetle larvae potentially occupying these plants are likely to be killed when the plants are removed.

To minimize the effects to the species FHWB (*i.e.*, Caltrans) will relocate (transplant) all viable elderberry shrubs that have one or more stems measuring 1.0 inch or greater in diameter at ground level and will plant additional elderberry, in the form of seedlings or cuttings, and associated native species in accordance with Service's 1999 *Conservation Guidelines for the Valley Elderberry Longhorn Beetle*. According to the guidelines, complete avoidance (*i.e.*, no adverse effect) is assumed when shrubs are located beyond 100 feet of the project boundary.

Transplantation of elderberry shrubs that are or could be used by beetle larvae is expected to adversely affect the beetle. Beetle larvae may be killed or the beetles' life cycle interrupted during or after the transplanting process. For example: (a) transplanted elderberry shrubs may experience stress or become unhealthy due to changes in soil, hydrology, microclimate, or associated vegetation. This may reduce their quality as habitat for the beetle, or impair their production of habitat-quality stems in the future; (b) elderberry shrubs may die as a result of transplantation; and/or (c) branches containing larvae may be cut, broken, or crushed as a result of the transplantation process.

Temporal loss of habitat will occur. Although conservation measures for effects on the valley elderberry longhorn beetle involve creation or restoration of habitat, it generally takes five or more years for elderberry plants to become large enough to support beetles, and it may take 25

years or longer for riparian habitats to reach their full value. Temporal loss of habitat will temporarily reduce the amount of habitat available to beetles and may cause fragmentation of habitat and isolation of subpopulations.

Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Because Butte County meadowfoam, vernal pool tadpole shrimp, and vernal pool fairy shrimp are endemic to vernal pools in the Central Valley, coast ranges, and a limited number of sites in the transverse range and Santa Rosa Plateau of California, the Service anticipates that a wide range of activities will affect these species. Such activities include, but are not limited to urban, water, flood control, highway and utility projects, chemical contaminants, as well as conversion of vernal pools to agriculture use. Many of these activities will be reviewed under section 7 of the Act as a result of the Federal nexus provided by section 404 of the Clean Water Act. However, an undetermined number of future unauthorized projects that alter the habitat of the Butte County meadowfoam, vernal pool tadpole shrimp, and the vernal pool fairy shrimp, likely will be permitted and, as such, are cumulative to the proposed project.

Continued human population growth in the Central Valley and other parts of California is expected to drive further development of agriculture, cities, industry, transportation, and water resources in the foreseeable future. Some of these future activities will not be subject to Federal jurisdiction (and thus are considered to enter into cumulative effects), and are likely to result in the loss of riparian and other habitats where elderberry plants and the valley elderberry longhorn beetle exist.

Commitments have been made by Butte County to prepare an HCP/NCCP(s) to address indirect effects of the proposed highway improvement project. While project proponents and local land use jurisdictions have discussed preparation of HCPs to support application for incidental take permits, no HCPs have been finalized or incidental take permits issued for these developments. If the project proponents continue to pursue development of HCPs and applications for incidental take permits, the effects of the planned developments will be addressed through future consultations pursuant to section 7 of the Act. However, the HCP process is voluntary and preparation of an HCP or issuance of an incidental take permit is not guaranteed. The decision to obtain incidental take permits lies ultimately with the prospective permit applicants. Some portions of the proposed developments are not otherwise subject to Federal permitting processes and may not be subject to section 7 consultation through other means. If development proceeds within portions of the proposed development areas, take of federally listed species may or may not result, depending on site specific conditions. Regardless of whether direct take will result from limited development within these proposed areas, indirect effects to federally listed species

are expected to result from all portions of the proposed developments.

In the interim, applicants have to demonstrate compliance with the Act before local permits are issued. A process will be put in place to help minimize the indirect effects. These other projects are anticipated to occur later in time, and the effects will not happen all at once.

Conclusion

After reviewing the current status of the Butte County meadowfoam, the vernal pool tadpole shrimp, vernal pool fairy shrimp, the valley longhorn elderberry beetle, the environmental baseline for the action area, the effects of the proposed project, and its cumulative effects; it is the Service's biological opinion that the SR 149 project, as proposed, is not likely to jeopardize the continued existence of the Butte County meadowfoam, vernal pool fairy shrimp, vernal pool tadpole shrimp, or valley elderberry longhorn beetle. No destruction or adverse modification of the valley elderberry longhorn beetle critical habitat is anticipated as none is located within the action area. Proposed critical habitat for Butte County meadowfoam, vernal pool tadpole shrimp, and the vernal pool fairy shrimp will not be adversely modified or destroyed.

INCIDENTAL TAKE STATEMENT

Section 9(a)(1) of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened fish and wildlife species, respectively, without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary, and must be implemented by the FHWA so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The FHWA has a continuing duty to regulate the activity covered by this incidental take statement. If the FHWA (1) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

Sections 7(b)(4) and 7(o)(2) of the Act generally do not apply to listed plant species. However, limited protection of listed plants from take is provided to the extent that the Act prohibits the removal and reduction to possession of federally listed endangered plants or the malicious damage of such plants on areas under Federal jurisdiction, or the destruction of endangered plants on non-Federal areas in violation of State law or regulation or in the course of any violation of a State criminal trespass law.

Amount or Extent of Take

Vernal Pool Fairy Shrimp, Vernal Pool Tadpole Shrimp, and Valley Elderberry Longhorn Beetle

The Service expects that incidental take of vernal pool fairy shrimp, vernal pool tadpole shrimp, and valley elderberry longhorn beetle may occur during this action. The extent of the take will be difficult to detect or quantify because of the ecology and biology of these species. Additionally, their size and cryptic nature makes the finding of a dead specimen unlikely. Seasonal population fluctuations also may mask the ability to determine the exact extent of take.

Due to the difficulty in quantifying the number of vernal pool crustaceans and valley elderberry longhorn beetles that will be taken as a result of the proposed action, the Service is quantifying take incidental to the project as the number of acres of vernal pools/ponded depressions (vernal pool crustacean habitat) and the number of elderberry stems one inch or greater in diameter at ground level (beetle habitat) that will become unsuitable for vernal pool crustaceans and beetles due to direct or indirect effects as a result of the action. Therefore, the Service estimates that all vernal pool fairy shrimp and vernal pool tadpole shrimp inhabiting 46.33 acres of vernal pool habitat (29.33 acres direct plus 17 acres indirect) and all valley elderberry longhorn beetles inhabiting 22 elderberry plants containing 52 stems one inch or greater at ground level will be harmed, harassed, injured, or killed, as a result of the proposed action.

Upon implementation of the following reasonable and prudent measures, incidental take associated with the SR 149 highway improvement project on the listed vernal pool crustaceans and the valley elderberry longhorn beetle, in the form of harm, harassment, injury, or mortality from habitat loss or degradation will become exempt from the prohibitions described under section 9 of the Act for direct effects. In addition, incidental take in the form of harm, harassment, or mortality associated with the proposed project will be exempt from the prohibitions described under section 9 of the Act for indirect effects, except for indirect effects of interrelated and interdependent actions such as urbanization, agricultural conversion of land, *etc.* as described in this biological opinion. Each of those interrelated and interdependent projects must receive its own incidental take authorization.

Effect of the Take

The Service has determined that this level of anticipated take is not likely to result in jeopardy to Butte County meadowfoam, vernal pool fairy shrimp, vernal pool tadpole shrimp, or valley

elderberry longhorn beetle, result in destruction or adverse modification of critical habitat for the beetle, or adverse modification or destruction of proposed critical habitat for Butte County meadowfoam, vernal pool tadpole shrimp, or the vernal pool fairy shrimp.

Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize incidental take of listed vernal pool crustaceans and the valley elderberry longhorn beetle:

Valley elderberry longhorn beetle and vernal pool crustaceans:

1. Take in the form of harm, harassment, and mortality of valley elderberry longhorn beetle and/or vernal pool crustaceans during construction activities and/or activities associated with implementing the project shall be minimized.
2. The effects to valley elderberry longhorn beetle and/or vernal pool crustaceans resulting from habitat modification and temporary and/or permanent losses and degradation of habitat shall be minimized and, to the greatest extent practicable, habitat shall be restored to its pre-project condition.
3. Temporal and permanent loss of valley elderberry longhorn beetle and/or vernal pool crustacean habitat shall be compensated.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the FWA must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measures described above. The terms and conditions are non-discretionary.

Valley elderberry longhorn beetle and vernal pool crustaceans:

1. The following terms and conditions implement reasonable and prudent measure one (1):
 - a. Implement the proposed conservation measures for the valley elderberry longhorn beetle, the vernal pool fairy shrimp, and the vernal pool tadpole shrimp, as described in the project description of this biological opinion and any associated environmental documents applicable to this project such as the BA and Environmental Impact Statement/Report. The only exceptions are as modified in these Terms and Conditions.
 - b. No earlier than two weeks prior to ground disturbance, site preparation, or other construction activities, a Service-approved biologist will conduct a pre-

construction survey to determine the presence of the vernal pool tadpole shrimp, vernal pool fairy shrimp, and the valley elderberry longhorn beetle within the action area. Should any of these species be located, its disposition and anticipated fate during construction will be determined. If it is determined that the species will be subject to take in the form of harm, injury, or death, the individual(s) will be relocated, if possible, by the Service approved biologist to an appropriate relocation site. The Service shall be contacted in writing within three (3) working days of the incidence.

- c. No earlier than one week prior to ground disturbance, site preparation, or other construction activities, a Service-approved biologist will conduct a training session for all construction personnel. All individuals that will be involved in the site preparation or construction must be present, including the representative responsible for reporting take to the Service and CDFG. Training sessions will be repeated for all new employees before they access the project site. Sign up sheets identifying attendees and the contractor/company they represent will be provided to the Service within one week of such training. At a minimum, the training will include a description of the natural history of the valley elderberry longhorn beetle, vernal pool tadpole shrimp, vernal pool fairy shrimp, Butte County meadowfoam, and their habitats; the general measures that are being implemented to conserve these species as they relate to the project; the penalties for non-compliance; and the boundaries (work area) within which the project must be accomplished.
- d. A Service-approved biologist must be present at the work site until such time as all instruction of workers, transplanting of elderberry shrubs, relocating of listed species, and major habitat disturbance have been completed. After this time, Caltrans may designate a person to monitor on-site compliance with all minimization measures. The Service-approved biologist shall ensure that this individual receives the training as outlined above. The biological monitor must be present on-site every day that work is occurring within 500 feet of any vernal pool or environmentally sensitive area (ESA). The monitor and the Service-approved biologist shall have the authority to halt any action that might result in impacts that exceed the take levels anticipated by the Service during the review of the proposed action. Should a federally listed species be located within the project area during construction, both the Service-approved biologist and the biological monitor are exempt from the prohibitions of take under Section 9 of the Act for the one-time action of relocating the individual(s) to a safe area. If work is stopped, or a listed species is relocated to avoid take, the Service shall be notified immediately by the Service-approved biologist or on-site biological monitor.
- e. Roadways and disturbed areas within 100 feet of elderberry plants shall be watered daily to minimize dust emissions.

The following terms and conditions implement reasonable and prudent measure two (2):

- a. Implement the proposed conservation measures for the valley elderberry longhorn beetle, the vernal pool fairy shrimp, and the vernal pool tadpole shrimp, as described in the project description of this biological opinion and any associated environmental documents applicable to this project such as the BA and Environmental Impact Statement/Report. The only exceptions are as modified in these Terms and Conditions.
- b. The applicant must restrict all construction and repair work to the typical dry season, as specified in their Streambed Alteration Agreement with CDFG.
- c. All avoided wetlands, including vernal pools and swales, within the project footprint, shall be designated as environmentally sensitive areas (ESAs). No activities, including stockpiling soil, driving or parking any equipment or vehicles, storing supplies or containers, and creation of borrow pits shall be permitted within the ESAs. The wetlands shall be marked with bright orange fencing at least five feet tall, by the Service-approved biologist. Such fencing shall be adequate to prevent encroachment of construction personnel and equipment into vernal pool areas during project work activities. Not only shall the immediate boundaries of the vernal pools be protected but also the watershed that may be affected. The fencing shall buffer vernal pool areas by 250 feet, if possible. Such fencing shall be inspected and maintained daily until completion of the project, upon which it shall be removed. Adequate signage shall be placed on the fence to indicate areas to be avoided.
- d. Collection of native California shrub, forb, and grass species for the purposes of the revegetation effort must not occur within areas designated as Environmentally Sensitive Areas (ESAs) or any other habitat currently occupied by listed species or species of special concern. A Service-approved biologist must have oversight of the collection process and revegetation effort.
- e. General riparian vegetation, with the exception of elderberry shrubs, referenced in the in-stream and riparian proposed conservation measures of this opinion (*e.g.*, Items d and m), must be replaced at a minimum of 3:1 for shrubs and 5:1 for tree species, unless contradicted by CDFG. If revegetation restoration performance standards are not met, as proposed (*i.e.*, 80% success), remedial replanting must be implemented.
- f. Stockpiled topsoil and other construction materials (*e.g.*, soil, debris, *etc.*) must not be placed in areas where the materials may erode into vernal pools, swales, or other waterways through exposure to wind, rain, *etc.*

- g. Runoff from dust control, and oil or other chemicals used in other construction activities shall be retained in the construction site and prevented from flowing into adjacent vernal pool preserves. The runoff shall be retained in the construction site by creating small earthen berms, installing silt fences or hay-bale dikes, or implementing other measures on the construction site to prevent runoff from entering the protected pools.
 - h. The applicant must check and maintain construction equipment and vehicles operated in the project area daily to prevent leaks of fuels, lubricants or other fluids. The contractor(s) must have an approved Hazardous Materials Spill Prevention Plan before starting construction.
 - i. On-site erosion control methods must be in compliance with local Water Quality Control Board standards prior to their implementation at the project site, and must be implemented simultaneously with the initiation of excavation/construction activities. In addition, erosion control devices will be checked for integrity and repaired if needed, on a daily basis during and after construction.
 - j. Enhancement of the project area shall be accomplished by removal and proper disposal of all garbage and clean-up related materials during construction and immediately after project completion.
- 2. The following terms and conditions implement reasonable and prudent measure three (3):
 - a. Implement the proposed conservation measures for the valley elderberry longhorn beetle, the vernal pool fairy shrimp, and the vernal pool tadpole shrimp, as described in the project description of this biological opinion and any associated environmental documents applicable to this project such as the BA and Environmental Impact Statement/Report. The only exceptions are as modified in these Terms and Conditions.
 - b. Prior to any ground disturbance, at least 92.66 acres (2:1) credit shall be dedicated within a Service-approved vernal pool preservation bank, and preserved in perpetuity; or based on Service approval, 138.99 wetted-acres (3:1) of vernal pool habitat will be preserved under a conservation easement, in perpetuity. Preservation and/or creation of vernal pools at a non-bank site may be permitted, only with prior agreement and approval by the Service. If a non-bank site is chosen, FHWA shall be required to provide us with the following information: an approved conservation easement agreement, easement holder, management plan, funding for monitoring and management, success criteria, reporting requirements and schedule, creation plan and creation site suitability analysis.

- c. Prior to any ground disturbance, at least 29.33 acres (1:1) credit shall be dedicated within a Service-approved vernal pool creation bank, and preserved in perpetuity; or based on Service evaluation of site-specific conservation values, 58.66 acres (2:1) of vernal pool habitat will be created and monitored at a non-bank site as approved by the Service and preserved in perpetuity.
- d. Prior to any ground disturbance, in accordance with the Service's 1999 *Conservation Guidelines for the Valley Elderberry Longhorn Beetle*, the FHWA shall transplant all affected elderberry shrubs, elderberry seedlings, and associated native species, at the appropriate compensation levels (per the table in the proposed conservation measures of this biological opinion), to a Service approved site, protected in perpetuity. Alternatively, FHWA will transfer all elderberry shrubs and purchase the appropriate amount of elderberry and associated native species credits, per the Service's 1999 *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (and per the table in the proposed conservation measures of this biological opinion), at a Service-approved valley elderberry longhorn beetle conservation bank. Should the number of elderberry plants to be transplanted result in over 22 plants (due to clumping of plants during initial surveys), FHWA shall notify the Service immediately to reinitiate consultation.
- e. Prior to any ground disturbing activity, a copy of the comprehensive compensation plan shall be submitted to the Service for inclusion in the administrative record of this consultation.
- f. The FHWA shall provide the Service with annual reports to describe the progress of implementation of all the commitments in the Conservation Measures and Terms and Conditions sections of this biological opinion. The first report is due January 31, the first year after any ground disturbance, and annually on January 31 thereafter until all terms and conditions and/or performance criteria are met.
- g. A post-construction compliance report prepared by the Service-approved biologist(s) shall be forwarded to the Chief, Endangered Species Division, at the Sacramento Fish and Wildlife Office within 60 calendar days of the completion of each project. This report shall detail: (1) dates that construction occurred; (2) pertinent information concerning the applicant's success in meeting project compensation measures; (3) an explanation of failure to meet such measures, if any, and recommendations for remedial actions and request for approval from the Service, if necessary; (4) known project effects on federally listed species, if any; (5) occurrences of incidental take of federally listed species, if any; and (6i) other pertinent information.
- h. The FHWA shall ensure compliance with the Reporting Requirements below.

- i. During or upon completion of construction activities, the Service may conduct an on-site inspection of the site.

Reporting Requirements

The Sacramento Fish and Wildlife Office is to be notified immediately by telephone, and in writing, within three working days of the finding of any listed species or any incidental take of species, other than that permitted in this biological opinion. The Service point of contact is the Chief, Endangered Species Division, at (916) 414-6700.

The FHWA shall require Caltrans to report to the Service immediately any information about take or suspected take of listed wildlife species not authorized in this opinion. The FHWA must notify the Service within 24 hours of receiving such information. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal. The Service contact is the Service's Law Enforcement Office at (916) 414-6660.

Any contractor or employee who during routine operations and maintenance activities inadvertently kills or injures a listed wildlife species must immediately report the incident to their representative. The FHWA shall contact the CDFG immediately in the case of a dead or injured listed species. The CDFG contact for immediate assistance is State Dispatch at (916) 445-0045.

Any dead or severely injured valley elderberry longhorn beetles found (adults, pupae, or larvae) shall be deposited in the Entomology Department of the California Academy of Sciences. The Academy's contact is the Senior Curator of Coleoptera at (415) 750-7239. All observations of valley elderberry longhorn beetles - live, injured, or dead - or fresh beetle exit holes shall be recorded on CNDDDB field sheets and sent to the CDFG, Wildlife Habitat Data Analysis Branch, 1416 Ninth Street, Sacramento, California 95814.

Conservation Recommendations

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information and data bases.

1. It is recommended that the FHWA work with the Service to address significant, unavoidable environmental impacts resulting from projects proposed by non-Federal parties.
2. It is recommended that the FHWA incorporate into bidding documents the Service's 1999 *Conservation Guidelines for the Valley Elderberry Longhorn Beetle*, as appropriate.

3. It is recommended that the FHWA, in partnership with the Service, develop maintenance guidelines for the FHWA's projects that will reduce adverse effects of routine maintenance on valley elderberry longhorn beetle and vernal pool species and their habitat. Such actions may contribute to the delisting and recovery of these species by preventing degradation of existing habitat and increasing the amount and stability of suitable habitat.
4. Future road improvement/widening projects under the jurisdiction of the FHWA are anticipated throughout California. It is recommended that the FHWA, the Service, and all potential applicants develop a programmatic consultation similar to the 1997 Corps of Engineers programmatic biological opinion for projects with relatively small effects on federally listed species.
5. It is recommended that the FHWA protect and restore riparian and wetland habitats in the Sacramento River basin to increase habitat for the valley elderberry longhorn beetle and vernal pool species.
6. It is recommended that the FHWA assist in the implementation of the recovery plan for the valley elderberry longhorn beetle, and the vernal pool species once it is completed.
7. It is recommended that the FHWA conduct studies, review pertinent literature, and explore options that allow for construction of bridges by spanning channels with pre-cast techniques or without the use of in-water concrete to protect listed species dependent on this habitat.
8. It is recommended that the FHWA should develop and implement operations and maintenance standards to minimize effects of maintenance activities on the valley elderberry longhorn beetle, vernal pool species, and vernal pool and riparian habitats.
9. FHWA should not use mono-filament netting for erosion control or other purposes where snakes and other wildlife may become entrapped in it at the project site.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION–CLOSING STATEMENT

This concludes the reinitiation of formal consultation on the Upgrade of State Route 70 project. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in

a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Please contact Harry McQuillen of this office at the letterhead address or at (916) 414-6600 if you have any questions regarding this biological opinion or the proposed Highway Improvement Project, State Route 70/99/149/191.

Sincerely,

Cay C. Goude
Acting Field Supervisor

Enclosures

cc:

ARD-ES, Portland OR

Butte County Association of Governments, Chico, California (Attn: Jon Clark)

California Department of Fish and Game, Rancho Cordova, California (Attn: Terry Roscoe)

California Department of Fish and Game, Sacramento, California (Attn: D. Wareycia)

Caltrans, Office of Environmental Management, Marysville, California (Attn: Krishnan Nelson)

U.S. Army Corps of Engineers, Sacramento Valley Office, Sacramento, California (Attn: Tom Cavanaugh)

Addresses:

Mr. Jon Clark, Executive Director, Butte County Association of Governments, 965 Fir Street, Chico, California 95928

Ms. Terry Roscoe, Supervisor, Habitat Conservation Program, California Department of Fish and Game, 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670

Ms. Dee Wareycia, Natural Heritage Division, California Department of Fish and Game, 1416 9th Street, Sacramento, California 95814

Mr. Krishnan Nelson, Associate Environmental Planner, California Department of Transportation, Office of Environmental Management, 703 B. Street, P.O. Box 911, Marysville, California 95901

Mr. Tom Cavanaugh, Chief, Regulatory Branch, Sacramento District, U.S. Army Corps of Engineers, 1325 J Street, 14th Floor, Sacramento, California 95814-2922

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44577
UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

November 13, 2002

In response please refer to:
SWR-00-SA-5867:FKF

Mr. Gary N. Hamby
Division Administrator
Federal Highway Administration
California Division
980 Ninth Street, Suite 400
Sacramento, CA 95814-2724

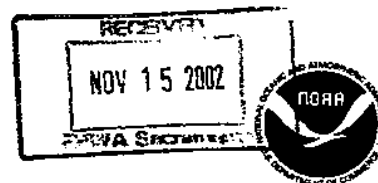
Dear Mr. Hamby:

This is in response to your letter dated October 8, 2002 requesting concurrence from the National Marine Fisheries Service (NOAA Fisheries) on a determination that implementing the proposed highway improvement project on State Route (SR) 149 in Butte County, between Chico and Oroville, is not likely to adversely affect Essential Fish Habitat (EFH) for Chinook salmon, specifically candidate Central Valley fall/late fall-run chinook salmon (*Oncorhynchus tshawytscha*).

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) propose to upgrade the 4.6 mile length of SR 149 between SRs 70 and 99 from a two-lane highway to a four-lane expressway, and construct freeway-to-freeway interchanges at the existing SR 70/149 and SR 99/149 intersections. The project would include construction of two additional lanes, realignment of SR 70 between SRs 149 and 191, and upgrading several interchanges. The highway spans several ephemeral creeks including Gold Run, Dry, Cottonwood, and Clear creeks. The Biological Assessment (BA), dated October 1, 2002, states that salmonid species are not expected to spawn or rear in the drainages within the project area. Proposed mitigation measures include an in-water work window from June 1 - October 15th, use of best management practices to minimize erosion or other impacts, and streamside vegetation restoration, as described in the BA.

Essential Fish Habitat

The creeks mentioned above have been identified as Essential Fish Habitat (EFH) for chinook salmon in Amendment 14 of the Pacific Salmon Fishery Management Plan pursuant to the



Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA). Federal action agencies are mandated by MSFCMA (Section 305[b][2]) to consult with NOAA Fisheries on all actions that may adversely affect EFH, and NOAA Fisheries must provide EFH Conservation Recommendations (Section 305[b][4][A]). In order to minimize effects to EFH for Chinook salmon, we have the following conservation recommendations:


- Any affected areas of streambank would be restored by planting native vegetation, including trees, to provide for future shading and woody debris input.
- Bridge design shall insure stormwater runoff from the road and bridge is channeled off the roadway and bridge such that there is no direct discharge of untreated runoff into any waterways.
- No disturbance or placement of dredged or fill material, including concrete, shall be placed in any waters of the United States including wetlands with the exception of the bridge abutments which may be constructed out of flowing water through use of coffer dams, and the concrete shall be allowed to completely cure before coming in contact with creek flow.

The MSFCMA and Federal regulations (50 CFR Sections 600.920) to implement the EFH provisions of the MSFCMA require federal action agencies to provide a written response to EFH Conservation Recommendations within 30 days of their receipt. A preliminary response is acceptable if final action cannot be completed within 30 days. Your final response must include a description of measures proposed to avoid, mitigate, or offset the adverse impacts of the activity. If your response is inconsistent with our EFH Conservation Recommendations, you must provide an explanation of the reasons for not implementing them. Adherence to the measures listed above would allow us to concur with your determination that implementation of the project, as proposed in the BA, would be not likely to adversely affect EFH for Pacific salmon.

If you have any questions or need further information please contact Ms. F. Kelly Finn at our Sacramento Area office at 650 Capitol Mall, Suite 8-300; Sacramento, CA 95814, or by telephone at (916)-930-3610.

Sincerely,



 Rodney R. McInnis
Acting Regional Administrator

cc: NMFS-PRD, Long Beach, CA
Stephen A. Meyer, ASAC, NMFS, Sacramento, CA



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CALIFORNIA DIVISION
980 Ninth Street, Suite 400
Sacramento, CA. 95814-2724

December 26, 2002

IN REPLY REFER TO
HDA-CA
File # 03-But-149 0.0/7.5
Interchanges and Widening
Document # P43034

Mr. Rodney R. McInnis, Acting Regional Administrator
National Marine Fisheries Service
501 West Ocean Boulevard, Suite 4200
Long Beach, CA 90802-4213

Dear Mr. McInnis:

This letter is in response to your letter of November 13, 2002 [SWR-00-SA-5867:MET]
concerning Essential Fish Habitat (EFH) conservation recommendations. We apologize for the
tardy response.

We accept the conservation measures identified in your November 13, 2002 letter to minimize
impact to Chinook salmon. Thank you for your assistance in this matter.

Sincerely,

/s/ Brian K. Zewe
For
Gary N. Hamby
Division Administrator

Enclosure (P42597)

c:
(E-mail)
Gary Winters
John Webb
Brian Zewe
Stephanie Stoermer
Maiser Khaled

(mail)
F. Kelly Finn
Sue Bauer (w/copy of enclosure)

Appendix E Final NEPA/404(b)(1) Alternatives Analysis

A draft alternatives analysis was prepared in accordance with Federal Clean Water Act Section 404(b)(1)/NEPA integration process for the proposed SR 70/149/99/191 highway improvement project in Butte County.

This report provides the final alternatives analysis with a summary of the draft.

The purpose of the project is to improve traffic safety, maintain LOS C through the 20-year design period by reducing congestion and delays, and provide a continuous four-lane inter-regional transportation system between Oroville and Chico. This project purpose is consistent with the Federal regulatory requirements and has been approved by the appropriate Federal agencies.

A full range of alternatives was analyzed in the draft. The draft analysis of alternatives that would meet the defined project purpose and need found Alternative 3 to represent the Least Environmentally Damaging Practicable Alternative (LEDPA), as it would have the least impact to aquatic resources. Caltrans and FHWA received agreement to the LEDPA from the USEPA (letter dated August 30, 2002), and preliminary agreement from the USACOE (Letter dated September 3, 2002).

Compensatory mitigation is detailed in the table on the following page.

But-70/149/99/191 Biological Mitigation Summary

Resource/Species	Mitigation Requirement			Mitigation Location	Schedule
	Impact ha (ac)	Ratio	Total ha (ac)		
Vernal Pool Shrimp Habitat					
1. Preservation				Preserve 37.5 ha (92.7 ac) of vernal pool shrimp habitat at USFWS-approved mitigation bank, or purchase conservation easement at 3:1 ratio 56.2 ha (138.9 ac) on USFWS-approved conservation land	Prior to any ground disturbance, and/or prior to start of construction on or after April 15, 2004.
Direct Impacts	11.87 (29.33)	2:1	23.7 (58.7)		
Indirect Impacts	6.88 (17.0)	2:1	13.76 (34.0)		
2. Creation Direct Impacts	11.87 (29.33)	1:1	11.87 (29.33)	Create vernal pool shrimp habitat at USACOE/USFWS-approved site	
Butte County Meadowfoam					
Indirect Impacts	0.21 (0.53)	5:1	1.1 (2.7)	Contribution to multi-agency purchase of property containing established BCM population	Prior to any ground disturbance, and/or prior to start of construction on or after April 15, 2004.
Wetlands					
1. Freshwater Marsh	2.7 (6.7)	1.5:1	4.05 (10.0)	Create 4.05 ha (10.0 ac) of habitat on-site adjacent to beaver pond area	Contour grading will occur during construction of the SR 70/149 interchange. Revegetation will occur after the Notice of Completion of Construction (NOC) is sent by Caltrans to the Regional Water Quality Control Board via the Caltrans NPDES office. Permanent erosion control measures will be implemented as construction completes each stage of the project.
2. Mixed Riparian	0.97 (2.4)	1.5:1	1.46 (3.56)	Re-vegetate impact areas at creek crossings and created marsh habitat	Revegetation to occur after the NOC is sent to the RWQCB via the Caltrans NPDES office. Permanent erosion control measures will be implemented as construction completes each stage of the project.

3. Roadway Drainage	1.17 (2.9)	1:1	1.17 (2.9)	Replace drainage ditches in-kind on-site	New roadway drainage ditches will be constructed concurrent with construction of the roadway, and will be equal to or larger in volume than removed/filled ditches to achieve “no net loss” of habitat.
4. Jurisdictional Non-Wetland Waters	1.10 (2.72)	1.2:1	1.32 (3.27)	Mitigation will be out-of-kind by increasing functions of adjacent riparian habitat, mainly along Little Dry, Clear and Gold Run Creeks.	This mitigation is intended to compensate for lost aquatic resources below the ordinary high water mark and will occur with mixed riparian mitigation as stated above.
5. Other Wetlands	0.47 (1.16)	1.5:1	0.71 (1.74)	Mitigation out-of-kind will be added to mitigation for Mixed Riparian, Freshwater marsh, and Vernal Pool/Swale impact totals.	Prior to any ground disturbance, and/or prior to start of construction on or after April 15, 2004.
Valley Elderberry Longhorn Beetle (VELB)					
Direct Impacts	22 shrubs; 119 stems	5 stems per credit	24 credits	Payment to USFWS “VELB” fund; replacement planting and transplanting	Prior to any ground disturbance, and/or prior to start of construction on or after April 15, 2004.
Central Valley Chinook salmon					
Essential Fish Habitat	0.89 (2.2)	1:1	0.89 (2.2)	Revegetation at bridge crossings and creek banks to ensure “no net loss” of habitat	Permanent erosion control measures will be implemented as construction completes each stage of the project. Permanent revegetation to occur after the Notice of Completion of Construction is sent to the RWQCB via the Caltrans NPDES office.
Swainson’s hawk					
Potential Foraging Habitat	63.1 (155.8)	1:1	63.1 (155.8)	Covered with preservation of vernal pool shrimp habitat (upland component)	Pre-construction survey will determine presence/absence of nests.
Northwest Pond Turtle					
Marsh habitat	1.87 (4.61)	1:1	1.87 (4.61)	Covered under mitigation for marsh	Permanent erosion control measures will be implemented as construction completes each stage of the project. Contour grading will occur during construction of the SR 70/149 interchange. Permanent revegetation will occur after the Notice of Completion of Construction is sent by Caltrans to the RWQCB via the Caltrans NPDES office.
Oak Woodlands					
Permanent Impacts	0.55 (1.37)	1:1	0.55 (1.37)	Replacement planting on-site	Permanent erosion control measures will be implemented as construction completes each stage of the project. Permanent revegetation to occur after the Notice of Completion of Construction is sent to the RWQCB via the Caltrans NPDES office.

Appendix F Wetlands Only Practicable Alternative

WETLANDS ONLY PRACTICABLE ALTERNATIVE FINDING

Pursuant to: Executive Order 11990 – Protection of Wetlands

The proposed project will widen State Routes 70/149/99 in Butte County.

Alternatives

Alternative 1

This alternative would upgrade SR 149 to a four-lane expressway by adding two lanes on the south side of the existing roadway. Widening would begin at the proposed SR 70/149 interchange and end at the proposed SR 99/149 interchange, a distance of 7.5 km (4.6 mi).

Roadway

Alternative 1 would include the following roadway construction:

- Two 3.6 m (12 ft) lanes with an 18.6 m (60 ft) or 22 m (72 ft) median; 1.5 m (5 ft) median shoulder and 3.0 m (10 ft) outside shoulder,
- realignment of SR 70 between SRs 149 and 191,
- reconstruction of the SR 70/191 intersection,
- construction of driveway access roads,
- rehabilitation of the existing SR 149 roadway,
- construction of county roads including a portion of Shippee Road, Table Mountain Blvd. and the Book Farm road,
- construction of a drainage system to eliminate ponding within the right-of-way on the north side of SR 149 near the junction with SR 70.

Structures

Alternative 1 would require the following structures:

- freeway-to-freeway interchanges (direct connector) at the SR 70/149 and 99/149 intersections,
- two-lane bridges with shoulders over Dry Creek, Clear Creek, Little Dry Creek,
- four-lane bridge with shoulders on new SR 70 alignment at Gold Run Creek.

This alternative would also require a one-lane crossing over SR 149 to Openshaw Road for access to the Warren and Brown parcels (APNs 041-210-052, 041-200-041) south of SR 149. This over-crossing would function as a private driveway, with a locked gate provided at the north end.

Alternative 2

Alternative 2 would be similar to Alternative 1, except the additional lanes would be constructed on the north side of SR 149.

Alternative 3

Alternative 3 is also similar to Alternative 1, except the additional lanes would be constructed on the north side of SR 149 from the proposed SR 70/149 interchange to KP 4.1 (PM 2.6), and then transition to the south side from KP 4.1 (PM 2.6) to the proposed SR 99/149 interchange.

Measures to Minimize Harm

The following measures have been developed to minimize the environmental impacts to wetlands along State Routes 70/149/99:

1. Compensation for impacts will include the following:
 - Preservation and/or creation of habitat at a ratio and location (mitigation bank) approved by the U.S. Fish and Wildlife Service.
 - Restoration of habitat on-site.
2. Erosion control measures will be performed during and after construction of the project.

Findings

Based upon the above considerations, it is determined that there is no practicable alternative to the proposed new construction in wetlands and the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.

Appendix G Summary of Mitigation and Monitoring Commitments

But-70/149/99/191 Biological Mitigation Summary

Resource/Species	Mitigation Requirement			Mitigation Location	Schedule
	Impact ha (ac)	Ratio	Total ha (ac)		
Vernal Pool Shrimp Habitat					
1. Preservation				Preserve 37.5 ha (92.7 ac) of vernal pool shrimp habitat at USFWS-approved mitigation bank, or purchase conservation easement at 3:1 ratio 56.2 ha (138.9 ac) on USFWS-approved conservation land	Prior to any ground disturbance, and/or prior to start of construction on or after April 15, 2004.
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2. Mixed Riparian	0.97 (2.4)	1.5:1	1.46 (3.56)	Re-vegetate impact areas at creek crossings and created marsh habitat	Revegetation to occur after the NOC is sent to the RWQCB via the Caltrans NPDES office. Permanent erosion control measures will be implemented as construction completes each stage of the project.

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Swainson’s hawk					
Potential Foraging Habitat	63.1 (155.8)	1:1	63.1 (155.8)	Covered with preservation of vernal pool shrimp habitat (upland component)	Pre-construction survey will determine presence/absence of nests.
Northwest Pond Turtle					
Marsh habitat	1.87 (4.61)	1:1	1.87 (4.61)	Covered under mitigation for marsh	Permanent erosion control measures will be implemented as construction completes each stage of the project. Contour grading will occur during construction of the SR 70/149 interchange. Permanent revegetation will occur after the Notice of Completion of Construction is sent by Caltrans to the RWQCB via the Caltrans NPDES office.
Oak Woodlands					
Permanent Impacts	0.55 (1.37)	1:1	0.55 (1.37)	Replacement planting on-site	Permanent erosion control measures will be implemented as construction completes each stage of the project. Permanent revegetation to occur after the Notice of Completion of Construction is sent to the RWQCB via the Caltrans NPDES office.

Appendix H USFWS Species List

**Federal Endangered and Threatened Species that
may be affected by projects in Butte County**

Database Last Updated: July 23, 2002

Today's Date is: September 27, 2002

Listed Species

Invertebrates

Branchinecta conservatio - Conservancy fairy shrimp (E)

Branchinecta lynchi - vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus - valley elderberry longhorn beetle (T)

Lepidurus packardii - vernal pool tadpole shrimp (E)

Fish

Hypomesus transpacificus - delta smelt (T)

Oncorhynchus mykiss - Central Valley steelhead (T) (NMFS)

Oncorhynchus tshawytscha - winter-run chinook salmon (E) (NMFS)

Pogonichthys macrolepidotus - Sacramento splittail (T)

Amphibians

Rana aurora draytonii - California red-legged frog (T)

Reptiles

Thamnophis gigas - giant garter snake (T)

Birds

Haliaeetus leucocephalus - bald eagle (T)

Plants

Chamaesyce hooveri - Hoover's spurge (T)

Limnanthes floccosa ssp. *californica* - Butte County (Shippee) meadowfoam (E)

Orcuttia pilosa - hairy Orcutt grass (E)

Tuctoria greenei - Greene's tuctoria (=Orcutt grass) (E)

Candidate Species

Fish

Oncorhynchus tshawytscha - Central Valley fall/late fall-run chinook salmon (C) (NMFS)

Amphibians

Ambystoma californiense - California tiger salamander (C)

Birds

Coccyzus americanus occidentalis - Western yellow-billed cuckoo (C)

Species of Concern

Invertebrates

Anthicus sacramento - Sacramento anthicid beetle (SC)

Cicindela hirticollis abrupta - Sacramento Valley tiger beetle (SC)

Linderiella occidentalis - California linderiella fairy shrimp (SC)

Fish

Acipenser medirostris - green sturgeon (SC)

Lampetra ayresi - river lamprey (SC)

Spirinchus thaleichthys - longfin smelt (SC)

Amphibians

Rana boylei - foothill yellow-legged frog (SC)

Rana cascadae - Cascades frog (SC)

Rana muscosa - mountain yellow-legged frog (SC)

Spea hammondi - western spadefoot toad (SC)

Reptiles

Clemmys marmorata marmorata - northwestern pond turtle (SC)

Masticophis flagellum ruddocki - San Joaquin coachwhip (=whipsnake) (SC)

Phrynosoma coronatum frontale - California horned lizard (SC)

Birds

Accipiter gentilis - northern goshawk (SC)

Agelaius tricolor - tricolored blackbird (SC)

Ammodramus savannarum - grasshopper sparrow (SC)

Asio flammeus - short-eared owl (SC)

Athene cunicularia hypugaea - western burrowing owl (SC)

Baeolophus inornatus - oak titmouse (SLC)

Botaurus lentiginosus - American bittern (SC)

Branta canadensis leucopareia - Aleutian Canada goose (D)

Buteo regalis - ferruginous hawk (SC)

Buteo Swainsoni - Swainson's hawk (CA)

Carduelis lawrencei - Lawrence's goldfinch (SC)

Chaetura vauxi - Vaux's swift (SC)

Chlidonias niger - black tern (SC)

Cinclus mexicanus - American dipper (SLC)

Contopus cooperi - olive-sided flycatcher (SC)

Cypseloides niger - black swift (SC)

Dendroica occidentalis - hermit warbler (SC)

Egretta thula - Snowy Egret (MB)

Empidonax traillii brewsteri - little willow flycatcher (CA)

Falco peregrinus anatum - American peregrine falcon (D)

Gavia immer - common loon (SC)

Grus canadensis tabida - greater sandhill crane (CA)

Lanius ludovicianus - loggerhead shrike (SC)

Melanerpes lewis - Lewis' woodpecker (SC)

Picoides albolarvatus - white-headed woodpecker (SLC)

Picoides nuttallii - Nuttall's woodpecker (SLC)

Plegadis chihi - white-faced ibis (SC)

Riparia riparia - bank swallow (CA)

Selasphorus rufus - rufous hummingbird (SC)

Strix occidentalis occidentalis - California spotted owl (SC)

Toxostoma redivivum - California thrasher (SC)

Mammals

Corynorhinus (=Plecotus) *townsendii pallescens* - pale Townsend's big-eared bat (SC)

Corynorhinus (=Plecotus) *townsendii townsendii* - Pacific western big-eared bat (SC)

Dipodomys californicus eximius - Marysville Heermann's kangaroo rat (SC)

Euderma maculatum - spotted bat (SC)

Eumops perotis californicus - greater western mastiff-bat (SC)
Lepus americanus tahoensis - Sierra Nevada snowshoe hare (SC)
Martes pennanti pacifica - Pacific fisher (SC)
Myotis ciliolabrum - small-footed myotis bat (SC)
Myotis evotis - long-eared myotis bat (SC)
Myotis thysanodes - fringed myotis bat (SC)
Myotis volans - long-legged myotis bat (SC)
Myotis yumanensis - Yuma myotis bat (SC)
Perognathus inornatus - San Joaquin pocket mouse (SC)

Plants

Agrostis hendersonii - Henderson's bent grass (SC)
Allium jepsonii - Jepson's onion (SC)
Astragalus tener var. *ferrisiae* - Ferris's milk-vetch (SC)
Atriplex cordulata - heartscale (SC)
Atriplex depressa - brittlescale (SC)
Atriplex minuscule - lesser saltscale (SC)
Atriplex subtilis - subtle orache (SLC)
Balsamorhiza macrolepis var. *macrolepis* - big-scale (=California) balsamroot (SLC)
Botrychium ascendens - upswept moonwort (SC)
Botrychium crenulatum - scalloped moonwort (SC)
Calycadenia oppositifolia - Butte County calycadenia (=Butte County western rosinweed) (SLC)
Calystegia atriplicifolia ssp. *buttensis* - Butte County morning-glory (SC)
Castilleja rubicundula ssp. *rubicundula* - pink creamsacs (SLC)
Clarkia biloba ssp. *brandegeae* - Brandegee's clarkia (SLC)
Clarkia gracilis ssp. *albicaulis* - white-stemmed (=whitestem) clarkia (SLC)
Clarkia mosquinii ssp. *mosquinii* - Mosquin's clarkia (SC)
Clarkia mosquinii ssp. *xerophila* - Enterprise clarkia (SC)
Cypripedium fasciculatum - clustered lady's-slipper (SC)
Fritillaria eastwoodiae - Butte fritillary (SC)
Fritillaria pluriflora - adobe lily (SC)
Juncus leiospermus var. *ahartii* - Ahart's (dwarf) rush (SC)
Juncus leiospermus var. *leiospermus* - Red Bluff (dwarf) rush (SC)
Lewisia cantelowii - Cantelow's lewisia (SC)
Lupinus dalesiae - Quincy lupine (SC)
Monardella douglasii ssp. *venosa* - veiny monardella (SC)
Myosurus minimus ssp. *apus* - little mousetail (SC)
Paronychia ahartii - Ahart's whitlow-wort (=Ahart's paronychia) (SC)
Penstemon personatus - closed-lip (closed-throated) beardtongue (SC)
Rhynchospora californica - California beaked-rush (SC)
Rupertia hallii - Hall's rupertia (=Hall's California tea) (SLC)
Sagittaria sanfordii - valley sagittaria (=Sanford's arrowhead) (SC)
Sedum albomarginatum - Feather River stonecrop (SC)
Sidalcea robusta - Butte County sidalcea (=checkerbloom) (SC)
Silene occidentalis ssp. *longistipitata* - Butte County catchfly (=long-stiped campion) (SC)
Trifolium jokerstii - Butte County golden (=Jim's) clover (SLC)

Species with Critical Habitat Proposed or Designated in this County

California red-legged frog (T)
Central Valley fall/late fall-run chinook (C)
Central Valley spring-run chinook (T)
Central Valley steelhead (T)
winter-run chinook salmon (E)

Key:

(E) Endangered - Listed (in the Federal Register) as being in danger of extinction.
(T) Threatened - Listed as likely to become endangered within the foreseeable future.
(P) Proposed - Officially proposed (in the Federal Register) for listing as endangered or threatened.
(NMFS) Species under the Jurisdiction of the National Marine Fisheries Service. Consult with them directly about these species.
Critical Habitat - Area essential to the conservation of a species.
(PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
(C) Candidate - Candidate to become a proposed species.
(CA) Listed by the State of California but not by the Fish & Wildlife Service.
(D) Delisted - Species will be monitored for 5 years.
(SC) Species of Concern/(SLC) Species of Local Concern - Other species of concern to the Sacramento Fish & Wildlife Office.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

This is *not* an official list for formal consultation under the Endangered Species Act. *However, it may be used to update official lists.*

If you have a project that may affect endangered species, please contact the Endangered Species Division, Sacramento Fish and Wildlife Office, U.S. Fish and Wildlife Service.

Appendix I Relocation Assistance Advisory Service

RELOCATION ASSISTANCE ADVISORY SERVICE

BENEFITS PROVIDED TO RELOCATEES PURSUANT TO LAW

The acquisition and relocation program will be conducted in accordance with the **Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended**. Relocation resources are available and will be provided to all residential and business relocatees without discrimination.

The Department of Transportation provides relocation advisory assistance to any person, business, farm or non-profit organization displaced as a result of the Department's acquisition of real property for public use. The Department assists displacees in obtaining replacement housing by providing current and continuing information on the availability and prices of houses for sale and rental units that are comparable, "decent, safe and sanitary". Mobile home owner occupants renting space may receive a combination of replacement housing benefits due to owner/tenant status. Non-residential displacees will receive information on comparable properties for lease or purchase.

Residential replacement dwellings will be in equal or better neighborhoods, at prices within the financial means of the individuals and families displaced, and reasonably accessible to their places of employment. Before any displacement occurs, comparable replacement dwellings will be offered to displacees that are fair housing open to all persons, consistent with the requirements of Title VI of the Civil Rights Act of 1968.

Residential Relocation Payments Program

The Relocation Payment Program will help eligible residential occupants by paying costs and expenses. These costs are limited to those necessary for the purchase or rent of a replacement dwelling and actual reasonable moving expenses to a new location within a 50-mile radius of the displacee's property. Any actual moving costs in excess of the 50 miles are the responsibility of the displacee. The Residential Relocation Program can be summarized as follows:

Moving Costs

Any displaced person who was lawfully in occupancy of the acquired property regardless of length of occupancy therein, will be eligible for reimbursement of moving costs. Displacees will receive either the actual reasonable costs involved in moving themselves and personal property up to a maximum of 50 miles, a moving service authorization, or a fixed payment based on a fixed moving cost schedule which is

determined by the number of furnished or unfurnished rooms of the displacement dwelling.

Purchase Supplement

In addition to moving and related expense payments, fully eligible homeowners may be entitled to payments for increased costs of replacement housing.

Homeowners who have owned and occupied their property for 180 days or more prior to the date of the first written offer to purchase the property, may qualify to receive a price differential payment and may qualify to receive reimbursement for certain nonrecurring costs incidental to the purchase of the replacement property.

The price differential payment is made when the Department determines that the cost to purchase a comparable and "decent, safe and sanitary" replacement dwelling will be more than the present cost of the displacement dwelling. An interest differential payment is also available if the interest rate for the loan on the replacement dwelling is higher than the loan rate on the displacement dwelling, subject to certain limitations on reimbursement based upon the replacement property interest rate. The maximum amount of supplemental payment that the owner-occupants can receive is \$22,500.00. If the total entitlement (without moving payments) is in excess of \$22,500.00, the Last Resort Housing Program (LRHP) will be used.

Rental Supplement

Tenants who have occupied the property to be acquired by the Department for 90 days or more and owner-occupants of 90 days or more prior to the date of the first written offer to purchase, may qualify to receive a rental differential payment. This payment is made when the Department determines that the cost to rent a comparable and decent, safe and sanitary replacement dwelling will be more than the present rent of the displacement dwelling. As an alternative, the tenant may qualify for a down payment benefit designed to assist in the purchase of a replacement property. Once the eligibilities are determined, occupants of the residential care home will be eligible for tenant relocation benefits and their individual needs will be considered. The maximum amount payment to any tenant of 90 days or more and any owner-occupant of 90 days or more, in addition to moving expenses, will be \$5,250.00. If the total entitlement for rental supplement exceeds \$5,250.00, LRHP will be used.

Last Resort Housing

The State Department of Transportation, adopted federal guidelines for implementing the LRHP. Last resort housing benefits are, except for the amounts of payments and the methods in making them, the same as those benefits for standard relocation as explained above. LRHP has been designed primarily to cover situations

where comparable replacement housing is unavailable, or when their anticipated replacement housing payments exceed the \$5,250.00 and \$22,500.00 limits of the standard relocation procedures. In certain exceptional situations, LRHP may also be used for tenants of less than 90-days.

After the first written offer to acquire the property has been made, the Department will, within a reasonable length of time, personally contact the displacees to gather important information relating to:

- Preferences in area of relocation;
- Number of people to be displaced and the distribution of adults and children according to age and sex;
- Location of school and employment;
- Special arrangements to accommodate any handicapped member of the family;
- Financial means to relocate into comparable replacement dwelling which is decent, safe and sanitary.

The Business and Farm Relocation Assistance Program

The Business and Farm Relocation Assistance Program provides for aid in locating suitable replacement property, and reimbursement for certain costs involved in relocation. The Relocation Advisory Assistance Program can provide, when requested, a current list of properties offered for sale or rent, suitable for specific relocation needs.

The types of payments available to businesses, farms and non-profit organizations can be summarized as follows:

Moving expenses include the following actual reasonable costs:

The moving of inventory, machinery, office equipment and similar business-related personal property dismantling, disconnecting, crating, packing, loading, insuring, transporting, unloading, unpacking, and reconnecting of personal property.

Loss of tangible personal property provides payment to relocatee for "actual direct" losses of personal property that the owner elects not to move.

Expenses related to searching for a new business site can be reimbursed up to \$1,000.00 for actual reasonable cost incurred.

Reestablishment expenses up to \$10,000.00 relating to the new business operation.

In lieu payment (instead of the above payments). Payment "in Lieu" of moving and reestablishment expenses is available to businesses and farms which are assumed to

suffer a substantial loss of existing patronage as a result of the displacement, or if certain other requirements such as inability to find a suitable relocation site are met.

This payment is an amount equal to the average annual net earnings for the last 2 taxable years prior to relocation. Such payment may not be less than \$1,000.00 and not more than \$20,000.00.

Additional Information

Reimbursement for moving costs and replacement housing payments are not considered income for the purpose of the Internal Revenue Code of 1954, or sources for the purpose of determining the extent of eligibility of a displacee for assistance under the Social Security Act, local Section 8 housing programs, or other federal assistance programs.

Persons whom are eligible for relocation payments and who are legally occupying the property required for the project will not be asked to move without being given at least 90 days advance notice, in writing. Occupants of any type of dwelling eligible for relocation payments will not be required to move unless at least one comparable "decent, safe and sanitary" replacement residence, open to all persons, regardless of race, color, religion, sex or national origin is available, or has been made available to them by the State.

Any persons, business, farm or nonprofit organization which has been refused a relocation payment by the Department of Transportation, or believes that the payments are inadequate, may appeal for a special hearing of the complaint. No legal assistance is required, however, the displacee may choose to obtain legal council, but at their own expense. Information about the appeal procedure is available from Department of Transportation relocation advisors.

The information above is not intended to be a complete statement of all the Department's laws and regulations. At the time of the first written offer to purchase, owner-occupants are given a more detailed explanation of the State's relocation services. Tenant occupants of properties to be acquired are contacted immediately after the first written offer to purchase, and also given a more detailed explanation of the Department's relocation programs.